# Department of Commerce


# Strategic Information Technology Plan 2008-2012

**September 2007**

# Introduction

The mission of the Department of Commerce (DOC) is to create the conditions for economic growth and opportunity by promoting innovation, entrepreneurship, competitiveness, and stewardship.

To achieve this mission, the Department has established three strategic goals and a management integration goal. Each strategic goal involves activities that touch American lives every day. These strategic goals and the general objectives underlying each of them are stated as:

***Goal 1: Provide the information and tools to maximize U.S. competitiveness and enable economic growth for American industries, workers, and consumers.***

The objectives of this strategic goal are to enhance economic growth by developing partnerships with private sector and nongovernmental organizations, to advance responsible economic growth and trade while protecting American security, and to enhance the supply of key economic and demographic data to support effective decision making by various DOC stakeholders.

***Goal 2: Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science.***

Underlying this strategic goal are the general objectives of developing tools and capabilities that improve the productivity, quality, dissemination, and efficiency of research; the protection of intellectual property and improvement of the patent and trademark system; and the advancement of the development of global e-commerce and enhanced telecommunications and information services.

***Goal 3: Observe, protect, and manage the Earth's resources to promote environment stewardship.***

The objectives of this strategic goal are to advance understanding and predict changes in the Earth's environment, and to meet America's economic, social, and environmental needs through enhanced conservation and management of coastal and marine resources.

***Management Integration Goal: Achieve organizational and management excellence.***

This goal, which applies with equal importance to all of our operating units, reflects our commitment to continual improvement in the effectiveness of our organizational management in both public and private settings.

The Department of Commerce is a major Information Technology (IT) organization and successful outcome of its programs is dependent upon effective investment in, and management of, its IT resources. In FY 2007, Commerce spent $1.68 billion on IT services that include hardware, software, in-house personnel, and support services. In FY 2008 and 2009, the Department plans to spend $1.85B and $1.92B respectively on IT services. As a percentage of total agency expenditures, Commerce ranks among the top agencies in the federal government in

IT spending. Our ability to serve our customers and our effective stewardship of public resources depend upon the efficient application of our IT resources to furthering these goals.

This Strategic Information Technology Plan (SITP) is one of a suite of documents that guides the Department of Commerce's Information Technology (IT) planning process. It has been prepared consistent with federal guidance including:

- Government Performance and Results Act of 1993 (Public Law 103-62)
- Clinger-Cohen Act of 1996 (Divisions D and E of Public Law 104-106)
- The E-Government Act of 2002 (Public Law 107-347)
- Section 508 of the Rehabilitation Act (29 U.S.C. 794d), as amended by the Workforce Investment Act of 1998 (P.L. 105-220), August 7, 1998
- Information Quality Act of 2001 (Public Law 106-554)
- Office of Management and Budget Circular A-130; Management of Federal Information Resources
- Office of Management and Budget Circular A-11; Planning, Budgeting, Acquisition, and Management of Capital Assets
- Homeland Security Presidential Directive-7: Critical Infrastructure Identification, Prioritization, and Protection
- Privacy Act of 1974 (5 USC 552a)
- Telecommunications Act of 1996 (PL 104-104)

This SITP serves as the linkage between the Department of Commerce Strategic Plan and the SITPs developed by the DOC operating units. It draws upon strategic guidance found in the Department's Strategic Plan and sets the direction for development of the operating units' individual SITPs.

In this document you will find our strategies for implementation of legislative mandates, the vision of the Department's Chief Information Officer (CIO) for implementation of the Department's overall strategic plan, linkages between the SITPs of the Department's operating units, and the framework of strategic requirements to be implemented through the Department's use and management of Information Technology. Specific guidance, which shapes our formation of this plan, is found in the Department's Annual Performance Plan and Accountability Report and our Information Technology Capital Planning and Investment Control Process.

Our Strategic IT Plan is intended to serve several functions:

- It identifies our IT vision and will serve as a measuring stick to determine our success in progressing toward that vision.
- It defines the strategies we will follow to ensure that the Department acquires IT resources of the highest quality, manages those resources in the most effective manner possible, and makes efficient use of those resources in achieving our highest-level goals.

- It gives form to an environment to which Commerce's diverse operating units should strive. Accomplishment of our Departmental IT goals requires a coordinated effort by all of our organizational components.

Please direct comments or questions to the Office of Information Technology Policy and Planning (OITPP) at (202)-482-0335.

# IT Strategy in the Department of Commerce

## OBJECTIVES OF THE OFFICE OF THE CHIEF INFORMATION OFFICER

The Commerce Department's Chief Information Officer (CIO) provides guidance for the Department's effective use and management of the Department's IT resources. The CIO places a high priority on the full and appropriate use of information technology throughout the Department, and encourages the CIO of each of the subordinate DOC operating units to communicate the same priority throughout their organization.

### Dissemination of Timely, High-Quality Information

The DOC CIO continues to place a high priority on increasing the quality, timeliness, and amount of information available to our customers in electronic format. In order to maximize our potential as a transaction-oriented e-government entity, we focus our efforts on making all information of any potential use or interest to the public available on the Internet. Commerce disseminates a wide variety of economic, demographic, and scientific information, much of this information is released on prescribed public schedules or updated at stated intervals. We make every effort to share as much information as possible, while maintaining statutorily required confidentiality and protecting the privacy of individuals and businesses. Our priorities and schedules for scheduled information release are available on our Web site and our Information Quality Guidelines describe more fully our information dissemination standards.

#### *Organization and Categorization of our Information Products*

Commerce organizes its available information within two general categories:

Information Disseminated to the Public-at-Large

This category of information is published directly to the Internet, thus exposing it to freely available sophisticated search technologies. While the ease of indexing and searching the underlying data mitigates the need for formal data models, our Web standards and information quality guidelines provide a consistency to the quality and structure of these information products. The majority of information produced by Commerce fits this category and is not subjected to formal modeling or explicit cataloging.

Significant Information Products Exchanged Among Specific Identifiable Groups

The exchange or dissemination of this category of information is often not accommodated by freely available search functions. Because such search functions do not adequately organize and categorize these information products, formal data models are employed to ensure their effective dissemination. Because of the diverse nature of the information products produced by Commerce's various operating units, no single data model is appropriate for their dissemination. The formal data models employed by operating units such as the Patent and Trademark Office (USPTO), Bureau of the Census, National Institute of Standards and Technology (NIST), National Telecommunications

and Information Administration (NTIA) etc., are determined by industry standards, widely accepted practices, and/or international treaty. Each of the Commerce operating units has published a Data Reference Model (DRM) that relates, at a high level of characterization, their unique information products to the federal DRM.

***Commerce's Dissemination Review Process***

Each of Commerce's operating units maintains dissemination review programs and posts the results of those reviews to their individual Websites. Examples of these dissemination review programs can be found at these Web sites for Census, NIST, NTIA, and the USPTO.

At a Departmental level, Commerce collects operating unit-specific inputs and conducts a dissemination review in conjunction with its annual report to the Office of Management and Budget (OMB) on its accomplishments in implementing the E-Government Act.

***Coordination with the Department's Freedom of Information (FOIA) Operations***

In conjunction with our efforts to make all our information products widely available to the public, we take a proactive approach to meeting both the letter and spirit of the Freedom of Information Act (FOIA). We maintain a Departmental FOIA reading room within the Herbert C. Hoover Building in Washington DC, as well as an electronic reading room on the Internet. Each of Commerce's operating units maintains their own conventional and electronic reading rooms as well.

As part of our annual e-government report, Commerce provides an updated description of our efforts to improve both access to and dissemination of our information products. In our FOIA Implementation Plan, we describe our procedures for responding to FOIA requests and our Department-wide requirement for sending an acknowledgement letter to all requesters of FOIA information. Our FOIA Improvement Plan provides a detailed description of our plans for reduction of FOIA backlogs and our method of multi-track processing that provides the flexibility to address relatively simple requests more quickly than through a single-track process.

Our FOIA Implementation Plan further describes our methodology for responding to FOIA requests with a compelling need. The term "compelling need" is defined as: (1) in the case of a requester that is primarily engaged in disseminating information, an urgency to inform the public concerning actual or alleged federal government activity, or (2) an imminent threat to the life or physical safety of an individual. Where it is determined that a FOIA request meets the established criteria of a compelling need, the request is accorded priority handling and the requested records are provided as soon as practicable.

**Innovative Use of Technology**

The Office of the Chief Information Officer (OCIO) actively supports the increased use of leading-edge technology throughout the Department. From the annual strategic IT planning process through the development, implementation, and deployment of operational IT systems, OCIO encourages all of the DOC operating units to seek out innovative approaches to achieving the Departmental mission more efficiently, and to deliver DOC products and services of the highest quality while maintaining low cost to the taxpayer.

## Efficient Acquisition and Management of IT Resources

It is the objective of the DOC CIO to further strengthen the Department's processes involved in the acquisition and management of IT resources, to maintain a robust IT Capital Planning and Investment Review process, and to ensure that the Capital Planning and Investment Control (CPIC) process is integrated with the Department's Enterprise Architecture. OCIO oversees an annual investment of approximately $1.7 billion in IT hardware, software, and services. Our CPIC process, as envisioned in the Clinger-Cohen Act of 1996, OMB Circular A-130 (Management of Federal Information Resources), and other related guidance and regulations serves as the vehicle for the execution and management of this investment. DOC policies and implementation guidance developed by OCIO directly support OMB guidance and provide a structured process for the review and evaluation of proposed IT initiatives as well as the control of ongoing IT projects

## Protection of Information Resources and our Critical Infrastructure

Also of high importance to the CIO are the Department's IT Security and Critical Infrastructure Protection activities. As more and more Departmental information is made available in electronic format, the potential for compromise of that information grows exponentially. To ensure the integrity and availability of the Department's information resources, we have increased our efforts toward maintaining a secure IT environment and have maintained a high vigilance in our implementation of policies and procedures to ensure continuity of Departmental operations.

## A Commitment to Continual Improvement

Commerce is committed to a process of continual improvement in its IT management practices. In order to understand how well we are performing and how we might improve that performance, Commerce conducts regular benchmarks of its IT management practices, measuring itself against the practices of leading organizations, both private- and public-sector. OCIO staff stay abreast of IT management best practices through participation at industry conferences, memberships in professional organizations and subscriptions to professional journals, magazines, and newspapers. To stay abreast of practice standards in governmental organizations, we review General Accountability Office reports of IT management processes. Commerce is also active on the Federal CIO Council's Best Practices Committee, and assists in the compilation of best practices to share across the Federal IT community.

Also, we are currently conducting semi-annual off-site conferences with the operating unit CIOs to exchange ideas and arrive at concurrence on strategic and operational issues

Commerce is active on the Federal CIO Council's Best Practices Committee, which has compiled best practices to share across the Federal IT community. Under the Best Practices Committee, Commerce has spearheaded a Community of Practice for Capital Planning and Investment Control. Commerce has also reached out across the Government to share our IT management practices through presentations at the Information Resources College of the National Defense University, National Academy of Public Administration, National Academies, and industry groups such as the Armed Forces Communications Association (AFCEA), Project Management Institute (PMI®), and National Defense Industrial Association (NDIA).

Our subscription to the Gartner Group's Monthly Research Review, along with online access to a Performance Benchmarking database enables us to compare our IT functions to those of similar organizations.

## THE INFORMATION TECHNOLOGY PLANNING PROCESS

The Commerce IT planning process requires that each operating unit develop strategic and operational IT plans. The purpose of the strategic IT plan is to focus attention on each operating unit's high-level, strategic application of IT to Departmental missions. The operating units' strategic IT plans highlight budget-year initiatives and address key planning issues such as the support of operating unit and Departmental missions, the incorporation of business process reengineering, and investment selection criteria such as return on investment, compliance with architectural goals, comprehensive risk management planning, and IT security.

The objectives of the Department's IT planning process are:

- To ensure decisions relating to IT investment and management are fully informed and that they are made with the best information available;
- To leverage the power of IT to improve delivery of Commerce products and services;
- To anticipate future trends in technology and to ensure that those trends are exploited in the fulfillment of Commerce's mission;
- To ensure that key stakeholders are properly identified and intimately involved in the planning, acquisition, and management of Commerce's information assets;
- To intelligently evaluate alternatives for fulfilling the Department's IT needs and to ensure that decisions made reflect an optimal approach to satisfying cost, schedule, and performance requirements;
- To ensure that decisions made regarding IT acquisition and management properly incorporate full consideration of the requirements for the security of information assets and that principles of individual privacy are fully integrated into IT solutions;
- To promote a fully integrated approach to program planning, IT security management, and the processes of investment evaluation, selection, and control;
- To ensure that the products and services delivered to our customers reflect full value for the resources expended.

The IT planning process is integral to the Department's IT capital planning and budget development processes, enhancing IT decision making at both the Departmental level and within the various operating units. OCIO staff coordinates IT planning processes with budget calls to the operating units in order to support IT plan development and the budget review process. IT projects must clearly demonstrate alignment with high-level Departmental goals to successfully complete the budget review process.

The operating units' Operational IT Plans (OITP) are based on OMB Circular A-11, Section 300 and delineate the detailed actions and resources necessary to achieve the goals established in the Strategic IT Plan. The focus of the OITP is on the operating units' planned IT activities for the

coming fiscal year and the achievement of performance measures required by the Government Performance Results Act (GPRA). The OITP is one piece of a coordinated suite of documentation, providing a linkage with the budget process and ensuring that related issues, such as the Enterprise Architecture, federal e-government initiatives, IT security, and privacy issues are considered on an ongoing basis. The OITP provides operational guidance to the operating units' IT managers, identifying specific schedules, acquisition plans, and performance measures.

## THE COMMERCE ENTERPRISE ARCHITECTURE

Commerce has established an Enterprise Architecture (EA) that promotes the effective management and operation of our IT investments in support of the business goals of the Department. The EA provides a comprehensive, integrated picture of current capabilities and relationships (the current architecture), a blueprint for the future based on the Department's Strategic goals (the target architecture), and a strategy for managing a transition from the current to the target environment. The EA also describes the information needed to carry out the Department's business processes; identifies the system applications that create or manipulate data to meet business information needs; and documents the underlying technologies that enable the generation and flow of information.

The EA is an essential tool for planning and managing the Department's resources and making maximum use of our limited IT dollars. It ensures the alignment of IT with the Department's strategic goals so that business needs drive technology rather than the reverse; identifies redundancies, and thus potential cost savings; highlights opportunities for streamlining business processes and information flows; assists in optimizing the interdependencies and interrelationships among the programs and services of the Department's operating units; ensures a logical and integrated approach to adopting new technologies; promotes adherence to Department-wide standards, including those for information security; and pinpoints and resolves issues of data availability, access, and quality.

Commerce's EA serves as an essential tool for strategic decision-making. DOC's enterprise-wide architecture program and processes allow the Department to plan cost-effective IT capital investments that are directly linked to the Department's missions and strategic goals. Our EA efforts are highly visible, contributing to both Commerce and government-wide efforts to achieve efficiencies through sound use of information technology. Both the Office of Management and Budget and the General Accountability Office are committed to the effective use of Enterprise Architecture, are actively promoting its value, and providing oversight to ensure the establishment of dedicated Enterprise Architecture programs. The Department's Enterprise Architecture Program and its integration with the IT Capital Planning and Investment Control Program were highlighted as one of three case studies in a government-wide report entitled "Enterprise IT Architecture, Capital Planning and Investment Control" prepared by the Federal CIO Council's Architecture and Infrastructure Subcommittee, under the direction of the Office of Management and Budget.

The Department has developed a cohesive set of Web-based architecture guidance documents, including standards, reference models, and best practices. These plain-English documents help ensure that each of the operating unit's architecture programs produces useful results and is in

full compliance with the Clinger-Cohen Act and the Office of Management and Budget Circular A-130, which require an architecture process for each federal agency. Commerce measures its status and progress against the OMB EA Assessment Framework. Commerce's status and progress are steadily improving.

The General Accountability Office's Enterprise Architecture Management Maturity Framework evaluates whether the Department has a committee or group representing the enterprise that is responsible for directing, overseeing, and/or approving the Enterprise Architecture. The Enterprise Architecture Review Board admirably fills this role for Commerce. Information on the structure, roles, and responsibilities of the Review Board can be found on page 41of this Plan.

**Structure**

The DOC EA has a broad scope. The DOC EA is the union of the operating unit architectures and the overarching Department architecture. The Department-wide architecture addresses lines of business and services common to all operating units. It establishes basic goals and directions, characterizes common systems and services, and defines fundamental standards universal to all operating units. This approach provides the operating units flexibility in executing their mission-specific lines of business, while providing greater efficiency and reduced cost for the common lines of business

The diverse nature and mission of each operating unit mandates a flexible structure, allowing each operating unit to define its mission specific architecture that best fits its business requirements. In this way, each operating unit can fulfill its mission tasks, and provide the best service to all stakeholders and customers while supporting the overall goals of the DOC. One example of this approach is the Commerce Business System (CBS), a key component of Commerce's Enterprise-wide Administrative Systems Architecture. The CBS development team articulated an architecture for financial systems with a Core Financial System at the center and multiple feeder systems that support separate financial functions such as personal property and acquisition. This Financial Systems Architecture is a key component of the Department-level Architecture; the Office of the Chief Information Officer and the Commerce IT Review Board use this as a target architecture when analyzing proposals for new systems with financial implications, ensuring against the development of redundant systems and verifying that all financial systems integrate with CBS.

**Infrastructure Consolidation**

Commerce has extended its Enterprise Architecture focus to our IT infrastructure and this approach has been validated by the OMB Infrastructure Optimization Initiative (IOI). The IOI has defined a strategy to optimize the Federal IT Commodity Infrastructure, and DOC's consolidated infrastructure approach is in direct alignment with that strategy. Through use of appropriate aggregation, efficient intra-agency service standards, and best practices appropriate to bureau mission requirements, the Department expects to significantly improve the efficiency of our IT infrastructure. Our focus, much like that of the IOI, will be on data centers, data networks, and desktop management.

The consolidation of our IT Infrastructure has been undertaken with three objectives:

- To operate and maintain an evolving infrastructure that supports mission objectives,
- To improve services provided so that our customers have timely, reliable, and cost-effective access to Commerce information technology when and where they need it,
- To streamline and unify our IT infrastructure investments wherever possible.

This consolidated infrastructure methodology reflects our EA approach and establishes a Departmental program for the management of IT infrastructure, formed on a principle-based IT Infrastructure Management Framework. Our vision of the Commerce IT infrastructure capability is that it is mission driven and integrated with EA governance structures and processes.

The DOC consolidated IT infrastructure also promotes dialogue among the operating units, and this type of cooperation has already begun to yield improvements in the management of our IT infrastructure investments. These improvements in infrastructure management have allowed us to leverage the individual operating units' efforts across the Department, providing multiple benefits while reducing infrastructure investments.

## Demonstrated Benefits

Development of a solid Enterprise Architecture Program is a forward-looking, strategic planning effort that requires initiative and sustained work over a long period. As with any strategic planning function, benefits are generally realized in the long term. The proof of concept for the EA is in the selection and rational migration toward well-constructed target architectures. To this end, Commerce's continued developmental efforts are beginning to pay off in concrete ways. Some examples include:

### *HCHBNet*

HCHBNet is an overall building-wide network infrastructure in the Herbert C. Hoover Building (DOC Headquarters). Using an architectural approach to analyze the existing 14 separate networks, Commerce combined them into one, and then leveraged this infrastructure to combine over a hundred smaller phone systems into one Voice Over IP (VoIP) phone system with emergency broadcast capability.

### *Commerce Integrated Messaging System*

Commerce is in the process of converting its many disparate e-mail systems to an integrated messaging system that will, in addition to standardizing e-mail systems throughout the Department, provide the opportunity to centrally locate and centrally manage its telecommunication infrastructure, operated as a shared services model.

### *Commerce Business System (CBS) Server Consolidation*

CBS is a Department-wide integrated financial management system that is interfaced with other Department-wide administrative systems such as bankcard accounting, grants, time and attendance reporting/cost distribution, and small purchases management. Commerce has recently consolidated disparate CBS servers from four separate locations into one centrally-managed server farm at the Bureau of the Census Data Center in Bowie, Maryland. The establishment of this new environment is the first phase in our effort to implement applications consolidation and to demonstrate our viability as a Financial Management Line of Business provider.

## THE CAPITAL PLANNING AND INVESTMENT CONTROL PROCESS

The success of Commerce's IT investments directly influences the ability of the Department and its operating units to execute business plans and fulfill missions. Recognizing both the importance of IT investments to the organization and its role in supporting the success of these investments, OCIO has established a CPIC process. This guidance directs that investment control processes must include three essential phases: Select, Control, and Evaluate. Each phase is conducted as part of a continual interdependent management effort aimed at moving from a fixation on project-by-project focus to a wider, portfolio perspective of investment trends, directions, and outcomes.

Commerce's CPIC process links all IT investments to the strategic goals of the Department. The business case for each IT investment must identify its linkage to the Department's and operating unit's mission, goals and objectives, and address how it will enable and facilitate the achievement of the strategic goals and objectives. A more complete description of the Department's CPIC process is available on our Capital Planning and Investment Control Website.

### The Commerce Information Technology Review Board

Central to the management of the CPIC process is the guidance provided by the Department of Commerce Information Technology Review Board (CITRB). The CITRB, in concert with the DOC CIO Council and through the Department's CPIC process, provides oversight, review, and advice to the Secretary and Deputy Secretary on IT investments that meet certain criteria. This advice includes recommendations for approval or disapproval of funding for new IT systems or major modifications to existing systems. The CITRB also makes recommendations for continuing, modifying, or terminating existing systems based on performance, cost, or schedule criteria.

Proposals for new IT initiatives, along with supporting documentation, are presented to OCIO and the CITRB as part of the budget submittal process. Project sponsors also brief the CITRB on the merits of their projects, and the CITRB then rates and ranks proposed IT initiatives according to documented evaluation criteria. Project sponsors are given an opportunity to correct deficiencies and improve their scores. Projects that receive satisfactory ratings are forwarded as approved by the CIO for the budget review process. The CIO provides finalized project ratings and recommendations to the Office of Budget and Departmental executives, for determining final budget approval.

The CITRB's control reviews address projects that are in progress, at key milestones, or demonstrate a need for management intervention. The CITRB review process includes initial reviews and opinions by Departmental personnel with expertise in the CPIC process, cost-benefit analysis, project management practices, Enterprise Architecture, e-Government strategy, privacy, IT Security, Acquisition planning, legal issues, and budgeting. The results of these expert reviews provide the CITRB with insight as to how well Commerce's ongoing systems are meeting cost, schedule, and performance goals, and assist the Board in directing corrective actions as necessary. On a quarterly basis, project managers of major investment initiatives with high visibility, or significant risk factors, submit Earned Value Management reports that provide the DOC OCIO with an executive-level view of the cost and schedule performance of the

Department's IT investment portfolio. At least annually, OCIO staff reviews IT systems that are not the subject of formal DOC CITRB reviews or quarterly earned value reporting.

As an IT initiative is completed or reaches the operational life-cycle phase, a post-implementation review is conducted to explore lessons learned, verify how well it met the initial investment criteria, and to provide suggestions for better managing future projects. Managers of implemented projects are also required to submit an annual operational analysis that examines the initiative's performance in terms of customer results, business results, cost and schedule performance, and innovation. Operational performance of implemented projects is compared to projections, thus providing valuable information relative to the project's impact on operating unit and Departmental mission performance, and identifying any investment initiative modifications that may be needed. These operational analyses and review techniques allow the Departmental CIO to revise the investment management process based on lessons learned.

The CITRB is now institutionalized as a body that promotes improved IT decision-making throughout the Department. The CITRB is considered by Departmental senior management as the central decision-making point in the evaluation of IT initiatives for budget-year projects and ongoing investments.

**IT Portfolio Management and the Analysis of IT Investments**

Commerce's IT portfolio management process is the foundation of the CPIC process and the Enterprise Architecture. Over the last few years we have significantly increased our ability to ensure that proposed and current IT investments align with the Department's strategic vision and actively contribute to our performance against Departmental goals. Working with the operating unit CIOs, the DOC OCIO has insisted that operating unit-level portfolio management processes (which are often administered through formal investment boards modeled after the CITRB process) link the strategic and operational goals to specific program initiatives and that strategic IT plans articulate how the CIOs' organization, mission, vision, and strategic approach will equip the operating unit with the tools needed to achieve their strategic and organizational goals.

Specific accomplishments that demonstrate enhanced capabilities in analysis of IT investments and IT assets within the various DOC operating units are discussed in Appendix A.

**Use of the Program Assessment and Rating Tool (PART) in the Alignment of the DOC IT Portfolio**

The PART, as it is applied throughout DOC, provides a consistent approach to rating operational programs across the entire Department. The PART is a diagnostic tool that relies on the user's professional judgment to assess and evaluate programs across a wide range of issues related to performance.

Because each of the programs evaluated with the PART directly contributes to one or more DOC strategic goals, the alignment of our IT investments with our PART-evaluated programs is a natural outflow of the CPIC process. Commerce's IT portfolio is managed with input from all the Department's operating units and the CITRB, which includes executive management from throughout DOC. Only IT projects that directly contribute to the mission goals of both the operating unit and the Department are considered for submission to the CITRB, and of these proposed investments, only those achieving approval by the CITRB are incorporated into the

Department's IT portfolio. PART assessments help identify program strengths and weaknesses and help inform management actions, funding recommendations, and legislative proposals aimed at improving performance and achieving better results. The role of the PART in DOC's management of its IT portfolio is to focus attention on programs that could benefit from additional resources devoted to one or more IT investments or the realignment of resources already deployed.

Last year, the PART was applied to 30 Commerce programs for Budget Year (BY) 2008. From these 30 assessments, Commerce achieved the following assessment results:

| Rating | Number |
|---|---|
| Effective | 5 |
| Moderately Effective | 12 |
| Adequate | 9 |
| Results Not Demonstrated | 4 |

Program rating summaries of all of Commerce's PART reviews, along with specific improvement plans are available at OMB's Expectmore.gov Website.

# IT Governance

Commerce's IT governance process focuses on the consistent selection, evaluation, and control of our IT investments in a manner that is efficient, effective and transparent to the public. This process is designed to be fully compliant with all federal laws and regulations, and is intended to fully integrate the Capital Planning and Investment Control process, our e-Government efforts, Commerce's Program Management Office, and the Departmental Enterprise Architecture. The Department's Chief Information Officers' Council (CIO Council) is the linchpin for the governance process.

Also key to our IT governance process is a proper recognition of the human talent brought to bear in the management of our IT investments. The Commerce Honors Award Program provides this recognition and is considered a component of our governance process.

In addition to the management guidance brought to the governance by the Commerce CIO Council, an in-depth technical expertise in a number of disciplines is necessary to properly advise the Council's decisions relating to the management of our IT investments. This expertise is provided through a number of advisory groups assembled from throughout the Department.

## COMMERCE CHIEF INFORMATION OFFICERS' COUNCIL

The Departmental CIO views the CIO Council, composed of operating unit CIOs, as a management team working together to achieve common objectives. Through the CIO Council, operating units have a venue in which to share experiences, ideas, best practices, and innovative approaches related to information resources management.

The CIO Council's vision is to serve as a resource to help the Department's operating units perform more efficiently at lower cost by promoting the efficient and effective use of Departmental information resources. The CIO Council supports business process reengineering, continuous process improvement, and measurable increases in performance in the work related to the achievement of Departmental missions, goals, and objectives.

The CIO Council provides an opportunity for all DOC operating unit CIOs to confer in the following areas:

- Implementation of an effective process for managing IT resources and providing regular briefings to the DOC CIO on IT program activities.
- Implementation of a process for the selection, control, and evaluation of IT investments.
- Annual self-assessment of the maturity of the operating units' CPIC process.
- Keeping abreast of DOC guidelines for developing and maintaining operating unit planning and investment review processes.

The Department's CIO Council meets monthly to share information, promote Departmental IT goals, and keep abreast of public and private sector leading IT management practices.

## DEPARTMENT OF COMMERCE HONOR AWARDS PROGRAM

Within the Department of Commerce, we're dedicated to maintaining a corporate culture of excellence and a commitment to exceptional performance in our everyday work. As a result, we have set ourselves the challenge of delivering only the highest quality services. Our belief is that one of the best ways of achieving excellence is to acknowledge the exceptional performance of individuals and organizations throughout the Department. In support of this commitment, DOC's Honor Awards Program was created to recognize those who set the highest standards of performance, thereby raising the bar for us all.

The Honor Awards, in the form of Gold and Silver Medals, constitute the highest and second highest levels of recognition granted for distinguished and exceptional performance within the Department of Commerce. Although no monetary reward is associated with this recognition, it is clear that Commerce employees regard these awards as the ultimate recognition for their contributions. A Bronze Medal is the highest honorary award granted by an operating unit, a Secretarial Officer or equivalent, and is defined as superior performance characterized by outstanding or significant contributions, which have increased the efficiency and effectiveness of the operating unit. To warrant a Bronze Medal, a contribution must focus on qualitative and quantitative performance measures reflected in the Department's Strategic Plan.

Over the past several years, honor awards in all categories - Gold, Silver, and Bronze - have been granted to individuals and groups throughout the Department who have made significant contributions to the innovative planning and management of Commerce's IT resources.

We feel that these honors recognize the collaborative commitment to excellence exhibited by the IT professionals from throughout the Department, and serve as firm evidence of the high quality with which DOC IT initiatives are managed. Without the contributions of these cross-Departmental groups and a sincere dedication to quality at the individual level, many of our leading-edge initiatives would never have come to fruition.

## DEPARTMENT OF COMMERCE ADVISORY GROUPS

Central to the governance process are the processes of strategic planning, prioritization, decision-making, and performance measurement relative to all our major IT investment, whether developmental or steady-state. The CIO Council is advised on these processes through the expertise of several advisory groups within the Department. These groups and a discussion of their activities are discussed in Appendix B – Department of Commerce Advisory Groups.

## OCIO Goals, Strategies, and Performance Measures

***Goal 1 To continue to improve our support to the Department's customers and business partners by maximizing our use of the Internet and aligning our online business functions with federal e-government and Line of Business initiatives.***

Through the Department's CIO Council and its advisory groups, Commerce's operating units have worked together to identify common technical solutions for the implementation of Internet-based services. Each of the operating units and Departmental offices has made great strides in achieving internal interoperability and providing new and more efficient services to our customers and stakeholders. Our approach to date has been to create innovative solutions, rather than simply automate existing processes. We have transformed the Department of Commerce into a truly electronic government entity, demonstrating significant performance gains, and providing leadership at the national level. It is our intent to continue this transformation by delivering even more of our public-facing services through the Internet and to improve efficiencies government-wide by consolidating and integrating our online services with established federal e-government and Line of Business initiatives.

The strategic initiatives outlined below were developed to support an electronic government. They are based on an assessment of our agency's baseline situation and its challenges and risks, the performance metrics we are using to measure success, and the investments in people, processes, and technological infrastructure required to achieve our goal of an expanded electronic government capability.

Strategy 1.1: Require, through the IT planning process and the CPIC process, that the Department's information collection and dissemination activities make maximum use of the Internet, using innovative technologies to provide our customers with easier and more efficient access to our e-government capabilities.

Initiative: The CITRB process for approval of new IT initiatives requires the establishment of a measurable e-government goal and the submission of a business case that demonstrates the innovative use of the Internet to reduce the reporting burden placed on our customers.

Each operating unit has addressed, in their Strategic IT Plan, a methodology for furthering the Department's e-government goals and implementing Internet-based e-government initiatives. The implementation of these methodologies is a criterion against which the operating units are assessed in the CITRB review process.

Strategy 1.2: In order to further maximize the efficiencies of our e-government offerings, Commerce has eliminated redundancies between our offerings and other, federal-wide e-government and Line of Business initiatives. Additionally, we have aligned all of our e-government initiatives with federal-wide e-government and

Line of Business initiatives, and we will conduct annual reviews to ensure that this alignment continues.

Performance Measures:

1.1 DOC's progress in embracing the Internet as a customer-service vehicle is exemplified by the implementation of our e-Gov Highlights Web site, through which the public is able to buy products, obtain information, and apply for fishing permits, export licenses, and patents and trademarks.

Commerce has demonstrated effective use of the Internet by converting 80 percent of our transactions with the public to an electronic format and making most of these transactions achievable through the use of electronically fillable forms. This has helped us to achieve our aggressive e-government goals and significantly reduce the amount of paperwork required, both in our dealings with the public and in internal Departmental operations. Future goals include incorporating these electronically fillable forms into end-to-end electronic processes that will remove one more layer of manual intervention from our business processes.

In addition to eliminating the need for paper-based transactions, DOC has made significant achievements in the area of Web-based public informational services. Our progress in offering our services and products online is demonstrated by the amount of traffic experienced by the Department's Internet Web sites. Commerce was recently ranked by Brown University as the sixth most frequently visited of all U.S. Government Websites. NOAA's National Weather Service Web site is particularly popular during the June to October hurricane season.

Commerce's policy regarding its Web sites is structured to ensure that all of our Web sites are in compliance with appropriate legislation and regulations. Departmental policy requires that operating unit CIOs certify to the Departmental CIO that all Web sites maintained by their organization comply with the Department's Web policies. These policies address issues including content management, Web site traceability and accountability, Web site accessibility, visitor privacy, appropriate use, annual Web site certification, and inclusion of privacy policies in Platform for Privacy Preferences format. While compliance with those policies requiring significant infrastructure investment lag behind the more easily achieved policy requirements, Commerce's compliance rates range from 92% to 98%.

1.2 A measure of success of the e-government International Trade Process Streamlining (ITPS) initiative is OMB's having "graduated" the program to a fully-implemented status. Commerce continues to serve as the managing partner for ITPS, a seamless environment within which small and medium-sized enterprises (SMEs) can research markets, gather trade leads, and conduct a majority of their export transactions online. Through ITPS, U.S. businesses are able to achieve real cost savings by reducing the amount of time they spend gathering information, completing forms, and interacting with disparate

government agencies. ITPS has consolidated and integrated the export process online under Export.gov, which includes foreign partner matching/verification, export financing and insurance, and consolidated market research. The interagency aspect of ITPS has been further expanded to include the NAFTA Certificate of Origin form, the integration of content from the United States Department of Agriculture's Foreign Agriculture Services into Export.gov, and an online credit application. Companies interested in evaluating U.S. trade relationships with foreign markets can retrieve the latest annual trade data, visualize, analyze, print, and download customized output using Export.gov's interactive tool, TradeStats Express.

Commerce is also a participant in 29 other e-government and Lines of Business initiatives. The Department's CIO has taken an aggressive stance and is committed to eliminating any duplication with any government-wide e-government initiative. Commerce's strategy toward participation in federal e-government initiatives dictates that we will provide back-end processing only for the various e-government portals and storefronts.

The Department also participates in numerous crosscutting programs involving multiple bureaus; other federal, state and local agencies; foreign governments; and private enterprise. The Departmental CIO has stressed to the operating unit CIOs the importance of seeking opportunities for further participation in interagency e-government initiatives. Specific areas where Commerce sees possible opportunities to establish further e-government involvement include:

- Commerce leads and the Secretary chairs the federal government's Trade Promotion Coordinating Committee (TPCC), which consists of at least 20 agencies, and seeks to establish a government-wide strategy for export promotion activities.
- EDA builds partnerships with federal, state, and local entities including: the Federal Emergency Management Agency (FEMA), the Environmental Protection Agency (EPA), the Department of Energy (DOE), the Department of Labor (DOL), the Department of Agriculture (USDA), the Department of Transportation (DOT), the Department of Housing and Urban Development (HUD), the Appalachian Regional Commission (ARC), and the Denali Commission.
- BEA relies on the Census Bureau, Bureau of Labor Statistics (BLS), and the Internal Revenue Service (IRS) as data sources. Census provides BLS with monthly unemployment data. BEA also works closely with other agencies producing statistics including the U.S. Departments of Agriculture, Defense, Education, Energy, Health and Human Services, Transportation, and Treasury.
- Census works with state governments to make data available locally to the public through a variety of channels. Census also works with foreign

governments through the International Programs Center to assist in the use of statistics.

Commerce feels that, as a provider of information to a user community of citizens, it is important to periodically evaluate whether the service is meeting the needs of its users. Often times, direct communication can provide useful feedback for changes as well as new ideas for future products.

One example of our performance measurement via direct customer feedback is the annual NOAA Data and Information Users' Workshop hosted by NOAA's National Environmental Satellite, Data, and Information Service. The workshop provides a forum for scientists, researchers, managers, and technicians from NOAA to meet with the data user community. Users from academia, the private sector, the research community, and the government provide independent input that assists NOAA in planning for the future of data and data delivery. The goals of the workshop are to:

- Assess users' needs and societal benefits.
- Review and update users' needs for new products, data archiving, and access to stored data and plans.
- Improve communication and rapport with users.
- Solicit users' opinions on current data and information products and services.
- Inform users of future capabilities, plans, and data sets.

User recommendations have most frequently touched on ensuring that user communities have input into decisions affecting them; integrating multiple data sets into a seamless environmental database; and maintaining human customer interface. NOAA considers this workshop and the recommendations provided by the user community to be crucial to maintaining a continuing dialogue with its constituents, and evaluates and follows through on each recommendation.

The International Trade Administration (ITA) also relies on direct customer feedback for performance feedback. ITA collects Export.gov "Ease of Use" performance scores and enters them into an ITA-wide performance measure tracking system. ITA's tracking system, utilizing Panorama Business Views, allows performance measure owners to input performance measure results, track progress, view, and run reports on all ITA performance measures and metrics.

Export.gov's customer satisfaction and site usability ratings are collected using a five-question online Export.gov Feedback form, accessed from the Export.gov home page. The feedback form includes a number of open-ended questions which allow the user to specify the type of information they were seeking, describe the usefulness of the site's search capabilities, and provide suggestions for improvement.

A number of ongoing performance measures for Export.gov were recently developed. These measures, along with FY 2008 performance targets are provided in the table below:

| Metric | FY 2007 Performance | FY 2008 Target |
|---|---|---|
| Percentage of the 11 agencies on the Trade Promotion Coordinating Committees providing export content to Export.gov | 100% | 100% |
| Number of businesses registered on Export.gov | 29,751 | 15% Increase |
| Number of visits to Export.gov per month | 371,701 | 20%increase |
| Average number of times trade leads posted on Export.gov are accessed | 168 | 10% increase |
| Percentage of customers assessing the usability of Export.gov as "good" or "above average" | 80% | 80% |

***Goal 2 To further improve the Department's Capital Planning and Investment Control process, ensuring that the portfolio of investments in IT resources is supportive of Commerce's strategic goals.***

Strategy 2.1 Institutionalize a process of continual improvement in the IT Capital Planning and Investment Review process and ensure that Commerce's Departmental vision for IT management is fulfilled and enhanced at the operating unit level.

Initiative: Increase the CITRB's CPIC oversight capabilities by:

- Continuing pre-reviews in project management planning, Enterprise Architecture, and IT security.
- Maintaining a cyclical review process through which all IT projects/systems are reviewed and the Department's IT portfolio is systematically analyzed and adjusted.
- Ensuring that all IT projects/systems contribute to the Department's top-level performance measures and expanding the Department-level compliance review process relative to policies and architecture.

Performance Measures:

2.1 Commerce's Departmental CIO relies on the CPIC Maturity Model to assist our operating units in focusing on key elements of the CPIC process and

developing a well managed IT operation. Performance in FY 2007, as established by an Independent Validation and Verification performed by DOC's Office of IT Policy and Planning, was estimated to be 86% of operating units at level 3 and 21% at level 4.

Strategy 2.2: Further improve the IT project management capabilities within all operating units.

Initiative: Maintain the high caliber of DOC project management capabilities by continuing to collaborate with the Office of Human Resources Management (OHRM) on a curriculum of project management training, and completing certification training for those project managers who need it. Ensure that DOC project managers place greater emphasis on efficient project management techniques, including Earned Value Analysis, Earned Value Management Systems, and project risk analysis.

Performance Measures:

2.2 Commerce maintains a set of project manager qualification guidelines that specify experience and training requirements for DOC project managers assigned to major IT investments. The Departmental OCIO has reviewed the resumes of the managers of all major IT project managers within the Department and has validated that every DOC project manager assigned to a major IT investment meets both DOC and OMB certification and/or experience requirements.

Commerce has begun the creation of a certification program that will meet the needs of the Federal Acquisition Certification for Program and Project Managers (FAC-P/PM) published by OMB in April 2007. Our plan is to complete the certification of all managers of Major IT projects – at the Senior/Expert level – by September 2009 and then focus on the need for certifications at the Entry and Mid/Journeyman levels.

Commerce has instituted a program of continuous improvement of the project management talent within the Department by providing formal training and professional certification of our project managers. The number of project managers who have achieved Project Management Professional (PMP®) certification from the Project Management Institute continues to increase and OCIO continues to collaborate with the Department's Office of Human Resources to refine the curricular requirements for an on-going project management training program offering a Master's Certificate in Project Management through the George Washington University (GWU). Over the next five years, we expect to assist 200 Commerce employees in earning the GWU Masters Certificate.

Commerce has instituted a requirement that managers of all major IT investments – both development projects and steady-state initiatives – provide OCIO with quarterly performance reports. Performance reports for development projects are in the form of Earned Value Management System (EVMS) variance reports and cost and schedule performance indices, along with estimates to complete and estimates at completion. Since the inception of this reporting requirement, Commerce's portfolio of IT investments has demonstrated improved performance

and is now well within OMB's suggested tolerance of +/- 10% for both cost and schedule baselines.

***Goal 3 To ensure that Commerce's IT systems and information resources are safeguarded through a risk management-based process that properly weighs operational and IT security requirements in providing for confidentiality, integrity, and availability.***

Strategy 3.1 Maintain an IT Security Program in accordance with the Federal Information Security Management Act (FISMA), the Office of Management and Budget's Circular A-130, and other governing regulations. Work closely to develop a program that not only provides oversight to ensure all operating units are complying with regulatory requirements, but also to build a robust defensive posture that mitigates risks to Commerce's IT infrastructure.

Strategy 3.2 Continue to refine Commerce's Certification and Accreditation (C&A) process that ensures IT security requirements are assessed and addressed throughout a system's lifecycle. Ensure that the painstaking work required to perform C&A culminates in the clear and unambiguous identification of residual risk that can be readily communicated to Commerce's senior executives.

Strategy 3.3 Maintain a structured critical infrastructure protection program (CIP) to ensure the continued viability of IT systems that support national essential functions. Demonstrate the effectiveness of DOC's CIP program through the regular testing of reconstitution and response plans, and the regular conduct of vulnerability and Anti-Terrorism assessments and tracking of corrective actions through the POA&M process.

Strategy 3.4 Maintain IT security training program that addresses training of new personnel, annual refresher training for existing personnel, and specialized role-based training for personnel with significant IT security roles and responsibilities.

Strategy 3.5 Ensure that all information, relating to both individuals and businesses, collected and maintained by the Department is afforded proper privacy safeguards as defined in the Privacy Act of 1974, the E-Government Act of 2002, and the OMB Memoranda.

Initiative: Commerce continues to maintain a robust IT Security Program. We've harnessed the benefits of centralization in providing Department-wide strategic direction and oversight, while also using a decentralized model with our operating units to enable them to innovate in meeting mission unique requirements.

We continue to perform NIST compliant C&A of all Commerce IT systems that facilitate risk management-based decisions concerning a system's readiness and fitness to go operational.

To ensure our high standards are being met, we perform routine compliance reviews to assess the security of our IT systems. This compliance review program includes reviews of all of our operating units. This review assesses the security posture of our operating units, verifies that required security documentation is in

place and of sufficient quality, and validates that procedures and controls are implemented.

The Department continues to manage its Critical Infrastructure Protection (CIP) Program to include oversight and monitoring of Department IT resources managed by NOAA, BIS, NTIA, and NIST, all of whom support primary mission essential functions (PMEFs). CIP IT and facilities resources are assessed to ensure continued availability in the event of local, regional, or National crisis.

We are actively engaged in deploying Personal Identify Verification II (PIV II) compliant cards in support of Homeland Security Presidential Directive 12. We are beginning planning for the logical access structure that will enable single-sign-on and two-factor authentication.

We've developed stringent policies and taken enterprise-wide actions to safeguard our privacy data. For instance, we deployed full-disk encryption to 100% of the Department's laptops, leading to a substantial decrease in the loss of Personally Identifiable Information.

Performance Measures:

3.1 Maintain comprehensive IT security policies and procedures that are reviewed annually and kept up-to-date and aligned with FISMA and National Institute of Standards and Technology (NIST) standards and guidance.

Continue to meet or exceed all the FISMA performance measures and meet all FISMA reporting requirements by submitting annual and quarterly reports

Conduct reviews of IT security programs at Commerce's operating units. The program reviews by the Department will consist of interviews of key IT security officials to determine budget and resource allocation, security divers and challenges, progress against major IT security initiatives, operational and compliance security posture.

3.2 Continue to develop and refine the Smart Spot-Check procedures for the review of C&A packages. The Department will provide C&A reviews on all high systems undergoing C&A and provide training of OU personnel to conduct reviews of an appropriate subset of moderate systems.

Continue coordinating with the DOJ in deploying the ISS LOB sponsored Cyber Security and Assessment Management tool to help institute enterprise-wide consistent and repeatable processes for the conduct of C&A.

3.3 OCIO will continue to work with the Office of Security (OSY), Anti-Terrorism to demonstrate that Commerce has fully identified all of its critical infrastructure and key resources (CI/KR), to include IT systems and facilities and that they have been properly categorized in their support of national essential functions. The Department has continued to improve its Critical Infrastructure Protection Program, and conducted required examinations of

the IT resources within the Department considered priority mission essential that support national essential functions. In coordination with the OSY, we conducted site and asset vulnerability assessments of Commerce CI/KR to ensure that system dependencies are identified, and we assessed the ability to sustain critical service in the event of potential interruption. Multiple Anti-Terrorism assessments are scheduled for FY 2008 and FY 2009 to include facilities supporting Commerce CIP programs across the United States. In addition, IT program and system level Plans of Action and Milestones (POA&M) and Certification and Accreditation (C&A) will be reviewed for compliance.

3.4 Expand the use of the Commerce Learning Center (CLC) to not only provide IT Security Training and Awareness training to all DOC personnel, but also to provide role-base training for personnel with significant IT security responsibility.

3.5 Commerce has developed an IT Privacy Policy to ensure that identifiable information in our IT systems is effectively protected and secured. We have provided policy and guidance for operating units on the preparation of Web Privacy Policies, conducted Privacy Impact Assessments (PIAs), and posted privacy policies and PIAs on Commerce Web sites that are visited by the public.

We conduct PIAs to ensure that we do not collect, process, or disseminate any identifiable information from or about members of the general public that is not needed or authorized. We also extend this same level of privacy protection to business entities.

The Departmental CIO has been designated as Commerce's Senior Officer for Privacy, who works closely with the Chief Information Security Officer, the Chief Privacy Officer, and the Privacy Act Officer to ensure that we continue to protect all privileged-access personal and business information provided to us.

***Goal 4 To leverage the Department's Enterprise Architecture in a continual process of improving our business processes, aligning resources with Commerce's top-level strategic goals, and identifying and supporting key IT management decisions.***

Strategy 4.1 Ensure that Commerce IT management maintains a focus on improvement of mission performance and that identifying opportunities to take advantage of leading edge technology is part of that focus.

Strategy 4.2 Inculcate in the CITRB a focus on the use of new technology and ensure that management of the continuing introduction of new technology is a part of the CITRB review of new IT Initiatives.

Strategy 4.3 Encourage the reengineering of business processes so that the Department's day-to-day operations will be able to exploit the latest developments in IT to improve mission performance.

Strategy 4.4 Reduce redundancy in the Department's portfolio of IT resources. Combine capabilities, utilize already-existing resources, and ensure that available IT resources are documented and visible for all potential users.

Strategy 4.5 Utilize the DOC Enterprise Architecture and operating unit-specific architectures to identify and support key IT management decisions.

Initiative: Commerce uses the full suite of Federal Enterprise Architecture (FEA) Models to describe the business operations of the entire Department and to identify areas for collaboration both throughout the Department and across other federal agencies. Currency and relevancy of our architecture models can only be maintained if our IT planning process fully examines and aligns with those models. While compliance with the FEA models is an established criterion for CITRB approval of Commerce IT investment initiatives, the CITRB pre-review process requires that managers examine innovative approaches to meeting the Department's information needs and ensuring that our Enterprise Architecture remains current with emerging technology.

Performance Measures:

Commerce measures progress in the use of its Enterprise Architecture by performing an assessment against the OMB EA Assessment Framework. The OMB EA Assessment Frame work allows for self-assessment in three capability areas:

- Completion of an agency EA
- Use of the agency's EA, and
- Results achieved through the use of an EA.

In FY 2007 we achieved a level 4 in Completion, 3 in Use, and 4 in Results. The outcome of this performance improvement was OMB's categorization of our EA at "Green" overall in the e-Government component of the President's Management Agenda scorecard.

4.1 USPTO is now imaging all pertinent documents to facilitate workflow and allow for vastly expanded telecommuting. This improvement of USPTO's mission performance is the result of the Patent Automation and Trademark Automation efforts and is described more fully on page 58 of this Plan.

4.2 Census has adopted the innovative approach of using hand-held computing devices to reduce the cost of non-response follow-up in the 2010 decennial census. Census' plan for the deployment of hand-held computing devices in the 2010 decennial is more fully described on page 60 of this Strategic IT Plan.

DOC operating units have been directed to recognize Internet Protocol Version 6 (IPv6) readiness/compatibility as a likely future need and, wherever possible, mandate IPv6 compliance for all new hardware and software purchases. This mandate for IPv6 readiness/compatibility applies both to the acquisition of new technology and the upgrade of existing capabilities. The requirement for IPv6

capability is now a criterion for Commerce IT Review Board approval of all DOC Information Technology capital investments and is consistent with our identification of IPv6 as an emerging standard in the DOC Federated EA. Since IPv6 will become a core component of the Department's IT infrastructure, Commerce will use the Enterprise Architecture Assessment Framework to evaluate our IPv6 transition planning and progress.

4.3 The NOAA High Performance Computing initiative consolidates management of the resources of several organizations providing more capability without having to increase the number of supercomputers in use. NOAA has taken a corporate management and architectural approach that integrates like functions – research and development, and operations. Detailed information on NOAA's enterprise approach to its HPC architecture can be found at page 56 of this Plan.

DOC has taken the initial steps toward a Service Oriented Architecture (SOA) by deploying an Enterprise Application Interface to coordinate true stateful transactions between disparate systems. SOA is an architectural style whose goal is to achieve loose coupling among interacting software agents. This loose coupling allows the independent, yet related, deployment of discrete software components, each of which performs a specific task, and each of which has a fully documented and programmable Application Program Interface. By employing this technology, processes that are common to many business tasks can be performed by a single, integrated software package, greatly reducing system deployment costs and time. As we build more and more software systems, we see similar situations and patterns appearing, and pursuing an SOA approach will allow us to reuse the functionality of existing systems rather than building them from scratch.

4.4 NOAA has combined the dual processing environments of the Central Environmental Satellite Computer System (CEMCSC) and the Satellite Environmental Processing System (SATEPS) and now operates one Environmental Satellite Processing Center (ESPC). This combination of capabilities has improved NOAA's centralized IT planning, architecture, security, and continuity of operations capabilities. Tangible benefits of this consolidation have been a reduction in the numbers of computer operators and system administrators, and the elimination of the need for a second mainframe computer.

Commerce has reduced redundancy, combined capabilities, and is better utilizing existing resources through the use of our Consolidated Infrastructure Program. This program has four objectives: 1) to operate and maintain an evolving infrastructure that supports mission objectives, 2) to improve services provided so that our customers have timely, reliable, secure, innovative, and cost-effective access to Commerce information technology where and when they need it, 3) to enable all Commerce employees to fulfill their responsibilities efficiently and effectively, and 4) to streamline and unify our IT infrastructure investments wherever possible.

The Department will continue to reduce redundancies in the way it maintains information relative to our network-based entities such as applications, files, printers, and people, by implementing a Directory Services solution as part of our migration to a Department-wide integrated messaging system. Directory services will provide a consistent way to name, describe, locate, access, manage, and secure information about these resources. An enterprise approach to DOC's Directory Services solution will be an important step towards the consolidation of Departmental directories by offering standards-based interfaces allowing for interoperability and centralized directory management. This will allow us to reduce the number of locations in which information must be stored and entered, improve the accuracy of the information we maintain, and reduce the number of authentication credentials that must be maintained by our people.

4.5 The Census Bureau's 2010 Decennial Census Project is using the EA to guide decisions on what aspects can be outsourced, how the existing Census Bureau's components can be reused, and what new components can be developed for reuse in the future. Census has identified the use of handheld computers for field follow-up as a means of significantly reducing the overall cost of eliminating large amounts of paper that would have to be processed and the space needed to store and manage the documents. Cost avoidance is projected at $155 million.

The NOAA Comprehensive Large Array-data Stewardship System initiative was developed through the evaluation of the existing NOAA architecture and the requirements that several line offices had to increase storage capacity for data. By developing a centralized data storage resource, they are able to meet all storage needs at less overall cost as well as provide a major customer benefit by providing a single portal to retrieve any archived data.

The United States Patent and Trademark Office (USPTO) is using their EA to leverage e-government. USPTO is conducting a unified e-government study to analyze the business processes common to the patent processing and trademark processing. The study will present an enterprise strategy for targeting the appropriate consolidation of USPTO systems. USPTO is also designing a common approach to receiving patent and trademark applications either by mail or electronically using electronic file wrappers to identify documents and manage the workflow.

An analysis of the DOC architecture identified a number of systems used to process various federal grants. Using the EA, it was determined that multiple NOAA systems could be consolidated to one. This system plus the three remaining systems will be migrated to the grants lines of business consortia, when available. These consolidations provide cost avoidance through streamlined processing and standard procedures. This effort has also greatly simplified DOC's migration to the e-Grants front-end application system.

## Major IT Initiatives in the Department of Commerce

Commerce's Capital Planning and Investment Control process and Enterprise Architecture program require that any major IT investment demonstrate clear alignment with one or more of our Departmental strategic goals and that redundancy in IT investments be eliminated wherever possible. This disciplined approach to IT investments has allowed Commerce to fully align IT investment with our strategic objectives, eliminate redundant administrative systems, and develop Department-wide approaches to managing IT requirements. Major IT initiatives underway in Commerce include the following Departmental crosscutting initiatives, major modernization efforts, and operating unit-specific initiatives. All of these initiatives support the President's Management Agenda e-government goal. Table 1, below, provides a graphical depiction of the applicability of each of these initiatives to one or more of the Department's strategic goals, and each of the initiatives is discussed in detail in Appendix C – Major IT Initiatives in the Department of Commerce.

## TABLE 1 – APPLICABILITY OF INITIATIVES TO DEPARTMENTAL STRATEGIC GOALS

| IT Initiative | **Goal 1:** ***Provide the information and tools to maximize U.S. competitiveness and enable economic growth for American industries, workers, and consumers.*** | **Goal 2:** ***Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science.*** | **Goal 3:** ***Observe, protect, and manage the Earth's resources to promote environment stewardship.*** | **Management Integration Goal:** ***Achieve organizational and management excellence.*** |
|---|---|---|---|---|
| **Departmental Cross-cutting Initiatives** | | | | |
| Commerce Integrated Messaging System | **X** | **X** | **X** | **X** |
| Homeland Security Presidential Directive 12 | **X** | **X** | **X** | **X** |
| IPv6 Implementation | **X** | **X** | **X** | **X** |
| Commerce Business System | **X** | | | **X** |
| Commerce Business Environment | **X** | | | **X** |
| Office of Human Resources Management (OHRM) IT Systems | | | | **X** |
| Herbert C. Hoover Building Infrastructure Network (HCHBNet) | | | | **X** |
| **Major Modification Efforts Highlighted** | | | | |
| Census MAF/TIGER | **X** | | | |

| IT Initiative | Goal 1:<br>*Provide the information and tools to maximize U.S. competitiveness and enable economic growth for American industries, workers, and consumers.* | Goal 2:<br>*Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science.* | Goal 3:<br>*Observe, protect, and manage the Earth's resources to promote environment stewardship.* | Management Integration Goal:<br>*Achieve organizational and management excellence.* |
|---|---|---|---|---|
| NOAA HPC | | | **X** | **X** |
| USPTO Patents e-Gov | | **X** | | |
| **Other Operating Unit Specific Initiatives** | | | | |
| 2010 Decennial Census Systems | **X** | | | |
| Data Access and Dissemination System (DADS) | **X** | | | |
| NOAA Advanced Weather Interactive Processing System (AWIPS) | | | **X** | |
| Next Generation Radar Product Improvement (NEXRAD PI) | | | **X** | |
| National Weather Service Telecommunications Gateway Replacement (NWSTG) | | | **X** | |
| NOAA Geostationary Operational Environmental Satellites Ground System (GOES) and Polar-orbiting Operational Environmental Satellites (POES) | | | **X** | |
| National Polar-orbiting Operational Environmental Satellite System (NPOESS) | | | **X** | |

| IT Initiative | **Goal 1:** ***Provide the information and tools to maximize U.S. competitiveness and enable economic growth for American industries, workers, and consumers.*** | **Goal 2:** ***Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science.*** | **Goal 3:** ***Observe, protect, and manage the Earth's resources to promote environment stewardship.*** | **Management Integration Goal:** ***Achieve organizational and management excellence.*** |
|---|---|---|---|---|
| NOAA Comprehensive Large Array Data Stewardship System (CLASS) | | | **X** | |
| NOAA Grants Online | | | **X** | **X** |
| NIST Time Scale and Time Dissemination | | **X** | | |
| ITA International Trade Process Streamlining (ITPS) | **X** | | | |
| NTIA Spectrum Management | | **X** | | |
| BEA Economic Accounts | **X** | | | |
| BIS Export Control Automated Support System (ECASS) | **X** | | | |

# Management Attention

The key areas of management attention at the Department of Commerce are the 2010 Decennial Census, Export Control Automated Support System Redesign and Modernization (ECASS 2000+), the Departmental IT Security Program, and those projects that were, in response to OMB Memorandum M-05-23, identified as "high risk." The projects identified by Commerce as high risk are: Field Data Collection Automation (FDCA), Decennial Response Integration System (DRIS), 21st Century Master Address File/Topologically Integrated Geographic Encoding and Referencing Enhancements (MAF/TIGER), and the GOES-R Ground Systems. These projects were identified as high risk because they meet two of the four OMB Circular A-11 criteria; specifically, for each of these three projects:

- There are "exceptionally high development, operating, or maintenance costs, either in absolute terms or as a percentage of the agency's total IT portfolio," or
- "Delay or failure would introduce for the first time unacceptable or inadequate performance or failure of an essential mission function of the agency, a component of the agency, or another organization."

## Management Concerns

### *2010 Decennial Census*

The Department participated in the management of the 2000 Census, and is continuing its vigilant oversight of the 2010 Census. The Bureau of the Census has conscientiously conducted its planning and preparatory activities for the 2010 Census. The Field Data Collection Automation project is a key component of the Decennial Census project, and is discussed in more depth in the "High Risk Projects" section below. The Department also monitors progress of the Decennial Census Program and its various components through the Commerce IT Review Board and quarterly program management reviews. The Office of the Inspector General has completed a number of audits of the Decennial program, and will continue to monitor and review the remaining implementation efforts.

### *ECASS 2000+*

The Department continues to closely monitor ECASS 2000+ and the issues that have impeded the progress of this redesign project. Due to escalating costs and schedule slippages discovered at the last ECASS 2000+ review in mid-2003, the Commerce IT Review Board recommended that BIS halt all systems development work, redefine the functional requirements for the system, and revisit the ECASS 2000+ acquisition planning. In December 2003, the Federal IT Review Board, at the request of BIS management, conducted an independent peer review of ECASS 2000+ and identified structural, resource, and process areas where additional attention was needed to guarantee a successful project. In August 2004, BIS hired a new CIO and in December 2004 the project was restarted as ECASS Redesign Program. The restarted project completed its formal IT Life Cycle Management Initiation Phase, and CITRB reviews in February and June 2005. The project was rebaselined in June 2005 and is progressing effectively, with positive schedule and cost performance variances.

### *IT Security Program*

The security of IT systems is an area of priority throughout the Department. Recent audits by the Office of the Inspector General (IG), coupled with revealing internal compliance reviews by the Departmental OCIO and self-assessments by all Commerce operating units, have highlighted the need for improvements in Commerce's IT security management and implementation, especially in the area of ensuring quality documentation and repeatable processes in support of Certification and Accreditation activities. Specific actions to date include developing repeatable processes for the conduct and documentation of system Certification and Accreditation activities, increased testing of contingency plans for the Department's IT systems, implementation of secure configurations for most IT systems, regular compliance reviews and vulnerability testing, and institutionalized IT security training that includes annual refresher training for all Commerce computer users and role-based training for those with significant IT security responsibilities. Although this area remains a special management concern and is being closely monitored by the CIO and IG, we have made significant improvements in the security posture of the Department.

## **"High Risk" Projects**

### *Field Data Collection Automation (FDCA)*

FDCA is an $800 million effort to automate field data collection for the 2010 Decennial census and provide services such as logistics, training, and help desk support for 12 regional centers, more than 450 local Census offices, and up to 500,000 field staff. Because of the high development costs of the FDCA project and the significant mission impact that would result from delay or failure, this project is classified as high risk.

### *Decennial Response Integration System (DRIS)*

DRIS is a $500 million investment that includes response capture processing, the core system that will accept and integrate data inputs from multiple sources (paper, telephone and the MCDs used by field staff), and provides data needed by other systems for census operations, including follow-up operations, coverage measurement, census evaluations, post-response data processing systems, and geographic processing. Because the success of the overall Decennial Census is dependent on the ability of DRIS to interact successfully with the FDCA component of the Census, DRIS has been placed on OMB's High Risk list as well.

### *Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) Enhancement*

The $445 million MAF/TIGER Enhancement program will provide a major improvement to the quality and accuracy of data used by census takers and other state, local, and tribal government entities and numerous academic institutions throughout the U.S. Delay or failure of MAF/TIGER Enhancement would have a significant impact on accomplishment of the 2010 Decennial Census, thus a direct negative impact on one of Commerce's essential missions. For this reason, MAF/TIGER is considered a high-risk project. Current performance reports for MAF/TIGER Enhancement indicate that the project is ahead of schedule and under budget, with completion estimates well below initial baselines.

***National Polar-orbiting Operational Environmental Satellite System Ground System (NPOESS GS)***

NPOESS GS consists of the Command, Control and Communications (C3) and Interface Data Processing Systems (IDPS) required for the collection and dissemination of information relating to global environmental conditions. Although the NPOESS GS investment has been consistently on budget and schedule, in January 2006 Congress was notified that the overall NPOESS program would exceed a cost growth of more than 25%, requiring the program to be re-certified and restructured. The impact to NPOESS GS was that a baseline adjustment was required to extend the life of the developmental project, thereby increasing the program's life cycle cost. Because of these adjustments to the NPOESS GS cost and schedule baseline, the project remains on the High Risk list.

***Other "High-Risk" Projects***

Certain e-government projects in which Commerce participates are considered high risk because of their applicability across multiple agencies. By definition, delay or failure of these projects " . . . *would introduce for the first time unacceptable or inadequate performance or failure of an essential mission function of the agency, a component of the agency, or another organization*." Specific planned initiatives in which Commerce will participate and classifies as high risk include:

Electronic Official Personnel Folder (eOPF)

eOPF is a component of the OPM-led Electronic Human Resources Integration (EHRI) initiative. EHRI will support human resources management within Commerce and across the federal government at all levels from front-line employee to senior management. When fully implemented, the eOPF component of EHRI will replace the current paper-based Official Personnel Folder (OPF) with an electronic employee record for all Executive Branch employees, resulting in a comprehensive electronic personnel data repository covering the entire life cycle of federal employment.

Within Commerce, eOPF is in the mid-deployment phase. Deployment has been completed in NOAA, the Office of the Secretary, and all other operating units except for the Census Bureau, which will complete deployment in early calendar year 2008. Currently, eOPF is operating in parallel with the paper OPF. We expect to publish a Departmental policy addressing the full deployment of eOPF in FY 2008, and further expect that that policy will call for the elimination of the paper OPF and the exclusive use of eOPF within one year of the policy issuance.

eRulemaking

The eRulemaking initiative has as its purpose the expansion of public understanding and involvement in the federal government's rulemaking process. The approach being taken in this effort is the use of information technology to provide an easy and consistent way for the public to search, view, and comment on proposed federal regulations online. The first component of eRulemaking is a Web site, launched in January 2003, that allows the public to search, view, and download all rulemaking documents published in the *Federal*

*Register*. The Web site also allows the public to submit comments on proposed regulations currently open for comment.

The second component of eRulemaking established a full-featured docket management system that serves as a central repository for federal rulemaking dockets, which comprise *Federal Register* notices, supporting materials, and public comments. This component has been operational since September 2005. Commerce's goal is to have fully implemented eRulemaking by the end of FY 2007.

E-Gov Travel Service

E-Gov Travel Service (ETS) is envisioned as a government-wide, Web-based service that will apply world-class travel management practices to consolidate federal travel, minimize cost and produce superior customer satisfaction. ETS will be commercially hosted to minimize technology costs to the government and guarantee refreshed functionality. From travel planning and authorization through reimbursement, ETS will enable Commerce to capture real time visibility into the buying choices of travelers and assist our operating units in optimizing their travel budgets while saving taxpayers money.

Other planned initiatives not yet in the implementation phase include:

- E-Authentication
- E-Training – NTIS
- Financial Management Line of Business – Legacy System
- Integrated Acquisition Environment

## Appendix A: Enhanced Capabilities in the Analysis of IT Investments and IT Assets

***Bureau of Economic Analysis (BEA)***

BEA continues to refine its IT Portfolio Management Process (IT-PMP) each year as part of BEA's strategic IT planning process. The IT-PMP links BEA's strategic and operational goals to specific program initiatives in their Strategic Plan and articulates how the Office of the Chief Information Officer's organization, mission, vision, and strategic approach will equip BEA stakeholders with the IT tools needed to achieve their strategic and organizational goals. The IT-PMP serves as the guide to the Bureau's ongoing effort to improve the timeliness, relevance, and accuracy of its economic accounts, and to improve BEA's communications and information sharing with its customers. The IT-PMP also serves as a blueprint for the ongoing process of aligning information and emerging technologies with the business goals of the Bureau. This blueprint accomplishes the following:

- Guides the process of planning, acquiring, and deploying of IT resources.
- Ensures interoperability between BEA system components.
- Reduces information technology maintenance and support costs through BEA's centralized IT management process.
- Facilitates compliance with government-wide President's Management Agenda initiatives.
- Provides a road map for implementing new state-of-the-art technologies.
- Ensures that new technologies are implemented in accordance with BEA's target Enterprise Architecture.
- Assists in the development of IT performance measures utilized to rate projects relative to their contribution to BEA performance goals.
- Facilitates compliance with the e-Government Act, FISMA, and other regulatory requirements.

***Census Bureau***

In September 2005, the Government Accountability Office (GAO) completed an audit and assessment of Census Bureau Information Technology (IT) management practices. The GAO was asked to provide an IT profile of the Census Bureau, and evaluate the adequacy of the Census Bureau's IT policies, procedures, and practices in the areas of information security, human capital, system development, and investment & EA management.

The GAO found that the Census Bureau has a decentralized approach to IT management. The IT Directorate, led by the Chief Information Officer (CIO), is responsible for establishing IT policy and strategies, while multiple program directorates are responsible for implementing policies and managing IT systems and staff. The CIO has recommended that the Operating Committee (OC) and the IT Governing Board (ITGB) act as the Census Bureau's IT Investment Management (ITIM) oversight boards. Along with the CIO and inputs from the program directorates, the

ITGB will make recommendations to the OC, which will make the decision to initiate new IT initiatives or fund current IT investments. For new initiatives, project sponsors present fact sheets to the OC that list the strategic goal(s) supported, define the need and the concept, and provide a cost and schedule estimate.

The GAO also found that the Census Bureau has established policies & procedures and initiated key practices in many areas important to successful IT management. However, many key practices are not performed fully and consistently. As a result, the Census Bureau is at increased risk of inadequate management of its major IT investments and is more likely to experience cost & schedule overruns and performance shortfalls. The GAO recommended that the Census Bureau improve its ability to effectively manage IT by addressing weaknesses found in each management area the GAO reviewed.

The CIO has initiated improvement efforts, including redefining the CPIC process, using the GAO recommended Select, Control, Evaluate methodology, to establish policies and procedures to manage IT. This will eventually allow the Census Bureau to move in the direction of portfolio management.

The Census Bureau has submitted a draft of the new CPIC procedures and policies to the CIO for approval. The Census Bureau is currently operating at a self-assessment Level 4 in the IT Planning and Investment Review Maturity Model. The Census Bureau intends to obtain a Level 5 rating by September 30, 2011.

***Economic and Statistics Administration (ESA)***

ESA's IT portfolio is designed with input from all of ESA's business offices and the IT Steering Committee, which includes senior-level management. Projects are either received as input from the offices or directly from the Office of the Chief Information Officer and evaluated and approved by senior management. Only projects that support the mission of the organization are considered for inclusion in ESA's IT portfolio, and only those projects that are approved by the IT Steering Committee are pursued. ESA's Strategic IT Plan and Operational IT Plan guide all IT processes and provide the Office of the Chief Information Office with the necessary documentation and tools to accomplish short and long-term goals.

Since fiscal year 2003, when ESA's Office of the Chief Information Officer was established, ESA has seen a dramatic improvement in the management of its IT resources and internal decision-making process. Once the Strategic and Operational IT plans were developed, ESA produced its IT Portfolio Breakout Table that provides detailed information on each project pursued by the organization. Increased participation and input from all the offices has helped ESA better align its goals with the organization's mission and more efficiently allocate its IT assets. Each project is tracked and monitored against the Breakout Table at every stage of the process. Although ESA does not manage a large IT budget, adherence to Departmental guidance has streamlined its IT portfolio management process and ensured a more transparent management of IT resources.

***Economic Development Agency (EDA)***

EDA has had an active IT planning process in place for several years, and follows a formal investment review process. EDA develops and manages its IT budget centrally, with direct

oversight by the CIO. The CIO prepares the agency IT budget and submits it for review and concurrence by the members of the EDA Information Technology Review Board. The Board monitors project status and performance, and recommends corrective action on projects when necessary. Through this oversight and management, EDA improved the quality of its business cases and demonstrated effective management of its IT program, keeping costs within an established budget baseline that has seen no significant increases since FY 2002. In the past year, an additional IT staff member received formal project management training, adding to the EDA IT skill set. IT project managers continue to improve their efficiency and performance through their management experience, and through collaboration with other managers throughout the Department on common goals and consolidation projects.

***International Trade Administration (ITA)***

ITA is committed to sustaining and improving its IT management processes. To this end ITA continues to manage and enhance its IT portfolio and contribute to the Department achieving its strategic vision and performance. To achieve desired benefits and better realize Department goals, the ITA CIO continues to further develop enterprise system solutions and integrate ITA plans with Department plans. For example, the ITA CIO actively participated in forwarding the DOC-wide email standard efforts by providing information gleaned from ITA's own pursuit of outsourced enterprise solutions.

This year, the ITA CIO is participating directly in the ITA-wide strategic planning process that seeks to align our IT investments, our IT Enterprise Architecture efforts, and our IT security efforts with major unit level plans, goals, and objectives. Further, the ITA CIO is actively pursuing expanding its IT portfolio management and review processes in a way that advances the entire set of ITA strategic priorities, thus ensuring that current and future IT operations align to the ITA and Departmental mission, and take into account inputs from senior management and leadership as well as the program, administrative and technology perspectives.

In addition to advocating enterprise-wide IT solutions and the integration of IT plans with Department plans, ITA's CIO participates with other ITA senior management from the program units to standardize technology solutions. The ITA CIO is also aligning architecture efforts to support more directly the technical and organizational aspects of portfolio management and analysis so that ITA's CPIC practice and maturity level ratings continue to improve over the next few years, in concert with capability maturity improvements in IT security and Enterprise Architecture.

ITA's continued emphasis on involving senior leadership in IT portfolio management, adopting comprehensive IT decision-making processes and further developing project management disciplines is helping move ITA more quickly towards enterprise-wide computing and towards higher levels of integration with Department and federal program and service-delivery efforts, especially in the e-government world.

***National Oceanic and Atmospheric Administration (NOAA)***

NOAA has implemented a Planning, Programming, Budgeting, and Execution System (PPBES) as a component of its IT portfolio management process. NOAA's PPBES and the CPIC process are integral to the entire portfolio planning process and serve as primary tools in the management of all NOAA IT investments.

NOAA's Portfolio of IT investments is structured such that a clear linkage exists between each IT investment and one or more of NOAA's strategic goals. The analysis of every NOAA IT investment is conducted with a view toward the strategic goal supported by the investment. This serves to ensure that investments in IT resources provide a direct and focused contribution to NOAA's ability to accomplish its mission goals. To maintain this mission-oriented focus, each of NOAA's mission goal teams includes a NOAA line office CIO as an active voting member.

After a mission goal team has fully developed a concept for a proposed new IT investment initiative, the agency-wide NOAA IT Review Board (NITRB) reviews the investment proposal for approval and possible further recommendation to the Department of Commerce IT Review Board. NITRB reviews focus on the business case for the proposed investment, including the performance measures to be instituted and the strategic fit of the investment within NOAA's overall IT investment portfolio. The NITRB also evaluates proposed investments for compliance with the performance-based management, IT security, risk assessment, and Enterprise Architecture requirements of OMB's Circular A-11. To gain NITRB approval, a proposed IT investment must also demonstrate full life cycle cost planning and, where possible, represent an approach to an enterprise solution rather than a "stove pipe" process.

NOAA is continuing to focus on strengthening the IT investment management process in all of its line offices. In concert with a Department-wide effort to improve the management of its IT investments, NOAA is committed to managing its IT investments within aggressive cost, performance, and schedule goals. The NOAA CIO monitors monthly Earned Value Management (EVM) and Operational Analysis (OA) reports from NOAA Line Office executive management. NOAA's analysis of existing IT investments focuses on maintaining variance within plus/minus 10% and requiring mitigation plans from project managers when these control limits are exceeded.

***National Institute of Standards and Technology (NIST)***

NIST has continued its efforts to more formally define the boundaries of its IT portfolio. This work continues to strive towards a more enterprise-oriented view of all NIST IT assets in order to define the features that comprise various specific IT investments and how those investments will be managed. This effort continues to improve the NIST CPIC process by providing a consistent mechanism for organizing approval submissions and managing those submissions as they move through the approval and review process. NIST now uses an automated process to submit procurement requests for CIO review and approval of IT development services. This has enabled the NIST CIO to better manage the development or enhancement of systems in the NIST IT portfolio, both within the administrative and research organizations of NIST. Additionally, NIST has continued to reduce the number of systems in its IT portfolio by combining similar systems and by eliminating a number of obsolete legacy systems. This effort has led to a reduction in the number of IT systems in NIST's inventory from 112 to 71.

## Appendix B: Department of Commerce Advisory Groups

As Commerce has continued its work toward fulfilling its various strategic goals, we have maintained a focus on innovation; attempting to develop a complete understanding of the needs of our customers, business partners, and stakeholders. This focus on innovation allows us to identify both efficiencies and gaps in services, and to identify solutions that are as comprehensive as possible. Additionally, we strive to find ways to incorporate our users' understanding and acceptance into the concept and development phases of our business processes. One concept that we have incorporated in accomplishing this goal is the use of advisory and other groups. These groups, made up of technical and program representatives from the DOC operating units, are tasked with addressing specific IT-related challenges facing the Department.

The fundamental idea behind forming advisory and other groups is that those involved in providing particular services are in the best position to make decisions about how to coordinate, implement, and improve them. The group is able to synthesize greater knowledge as to what has worked well, what hasn't, and what problems can occur. By drawing on members from all areas of Commerce, the group is better able to understand the needs of our customers, business partners, and stakeholders and to devise effective and efficient ways of meeting those needs.

Commerce has utilized advisory and other groups to develop, recommend, or facilitate technical solutions in a number of areas. These groups are formed as a need arises and are typically disbanded when a technical solution is in place, fully operational, and no longer in need of continual maintenance attention. Groups that have completed their work include the Contingency Planning Advisory Group, which published a comprehensive guide to business continuity planning, and the Electronic Forms Advisory Group, which published a Web site of Commerce and government-wide electronic forms. Groups that have largely completed their work, but continue in an advisory capacity, include the Accessibility Coordinators Group, which published Commerce's policy addressing accessibility under Section 508 of the Rehabilitation Act and continues to monitor accessibility activities within Commerce and elsewhere, and the Information Quality Task Force, which published Commerce's Information Quality Guidelines, provides advice to operating units that receive requests for corrective action, and submits annual and ad hoc reports to the Office of Management and Budget on information quality activities. The Information Quality Task force also has responded this year to the OMB Peer Review Bulletin and posted an agenda of peer review plans.

Advisory groups currently operating within Commerce include the following:

### Commerce Enterprise Architecture Advisory Group

An Enterprise Architecture is recognized by Commerce's CIO as an integrated framework for deploying and managing IT resources to support the strategic goals and mission business functions of the Department. The Enterprise Architecture is a means to achieve federal strategic and IT goals by integrating work processes and information flows through the use of technology. The architecture specifies standards that enable information exchange and resource sharing. To ensure that this information exchange and resource sharing are maximized throughout the

Department and that our operating units are able to make maximum use of a "blueprint" that explains and guides our organization's IT and information management elements, the Department has chartered an Architecture Advisory Group.

The Department's Architecture Advisory Group (EAAG) serves as a Department-wide forum for addressing issues related to the implementation and use of Enterprise Architectures. The Advisory Group reports to the CIO Council and serves as technical counsel to the DOC Chief Information Officer (CIO) and the CIO Council on the subject of Enterprise Architecture. It is viewed by the CIO Council as a resource to assist the various operating units in the development of consistent IT Enterprise Architecture(s) throughout the Department.

The DOC Architecture Advisory Group is specifically tasked to make recommendations and provide advice with respect to policy, procedures, standards, and payoff as they relate to the development, maintenance, and evolution of the Department's Enterprise Architecture(s). This tasking has, to date, included activities to:

- Make recommendations and provide advice to the DOC CIO and the CIO Council with respect to policy, procedures, and standards related to the maintenance and update of the Enterprise Architecture.
- Manage development and acquisition of a unified EA management system tool for DOC and promote its use throughout the DOC, as specified in the DOC Technical Reference Model (TRM).
- Coordinate the interface between the Department's EA management system tool and OMB's Federal Enterprise Architecture and the related five Reference Models (Business, Service Component, Technical, Performance, and Data).
- Recommend technologies that may serve as "foundations" for Department-wide systems.
- Carry out tasks specifically assigned by the CIO or the CIO Council.
- Identify improved architectural practices and promote their adoption throughout the Department.
- Share experiences, ideas, and promising practices among Advisory Group members and the CIO community at large.

**Commerce Enterprise Architecture Review Board**

The Commerce Enterprise Architecture Review Board (EARB) is an adjunct to the Architecture Advisory Group and serves as the governance body on all Enterprise Architecture related issues.

The Enterprise Architecture Review Board provides recommendations to the Commerce Chief Information Officer (CIO), the CIO Council, and the Commerce Information Technology Review Board (CITRB) on Enterprise Architecture (EA) issues including review, evaluation, and approval of the Commerce Enterprise Architecture (EA), review and evaluation of compliance of IT investments with the EA, and recommendations regarding EA standards. The EA encompasses a number of artifacts including architecture principles, baseline and target architectures, and transition strategy, as well as reference models that support the Federal Enterprise Architecture References Models.

The responsibilities and duties of the EARB are as follows:

- Provide technical reviews, advice, and guidance to the Commerce CIO, the CIO Council, and the CITRB regarding the EA.
- Review all operating unit, including the Office of the Secretary, architectures as well as the Commerce umbrella architecture; provide recommendations for improvements; and formally approve or disapprove these architectures.
- Analyze the architecture of IT investments before the investments are reviewed by the CITRB and provide comments and recommendations to the CITRB regarding the architectural aspects of the investments, including compliance with Commerce's EA. Provide recommendations including advice for termination or modification of investments, including associated acquisitions that do not comply with the EA. See the CITRB charter for additional information regarding CITRB responsibilities.
- Carry out the configuration management activities identified for the EARB in the Configuration Management Plan.
- At the request of the Commerce CIO, review and provide recommendations regarding EA standards.

**Program Management Office**

The DOC PMO serves as the Department's central source for project management expertise, advice, and guidance. The PMO supports the Office of the Secretary and the Department's various bureaus in accomplishing the Department's management integration goal of achieving organizational and management excellence.

The PMO provides the leadership that will enable the Department to manage its information technology (IT) portfolio, programs, and projects utilizing sound project management methodologies based on industry best practices as presented in the Project Management Institute's publications, *A Guide to the Project Management Body of Knowledge Guide (PMBOK® Guide), The Standard for Program Management®* and *The Standard for Portfolio Management®*. This leadership role will focus on assisting DOC program and project managers in meeting cost, schedule, and performance goals.

**Consolidated Infrastructure Team**

The success of DOC's federated approach to an IT infrastructure depends on well-founded consensus decisions, informed by dialogue among the Department's various operating units. To this end, the Consolidated Infrastructure Team (CIT) was formed for the purpose of providing a forum for addressing issues and making recommendations related to IT infrastructure-related issues. The CIT meets bi-weekly to consider industry-wide trends in IT infrastructure technologies and processes, share operating unit-specific infrastructure experiences, and formulate strategies for Department-wide approaches to emerging infrastructure requirements.

## Webmasters Advisory Group

The Webmasters Advisory Group (WAG) provides advice to the CIO and CIO Council on matters that address use of the World Wide Web. Because use of the Web is central to Commerce's e-government activities, careful use and management of Commerce's Web sites is critical to the success of our e-government strategy. The WAG has published a series of policies addressing such Web issues as privacy, accessibility, domain names, and identification of Web site owners, endorsement disclaimers, and content management. Additional policies are under development.

## Information Technology Security Coordinating Committee

The maintenance of an effective IT Security program continues to be an ever-important factor in the proper management of Commerce's IT resources, and the Department remains dedicated to meeting the challenge of protecting all its vital information assets. Part of the IT Security challenge is in ensuring full and open communication among all our operating units. To meet this challenge, the Department formed the Information Technology Security Coordinating Committee (ITSCC). The ITSCC is chartered by the Departmental CIO and serves as a Department-wide forum for addressing issues and making recommendations related to IT Security responsibilities and activities. The ITSCC provides a forum for discussion of issues, has formed working groups to address specific IT security issues, and provides recommendations concerning IT security throughout the Department. The ITSCC has also proven to be a fruitful training field for new IT Security Officers and a source of continuing education for current IT Security Officers. The ITSCC meets on a monthly basis and often serves as the impetus for new IT security-related initiatives.

Commerce has established a Department-wide forum for the development of incident response capability procedures, responsibilities, and activities that will be used within DOC to establish the Federation of Computer Incident Response Teams (CIRT) structure and address issues pertaining to computer incident and response services. Within Commerce, this Federation of CIRTs consists of the formally designated Commerce incident response capabilities. The information sharing enables analysis of Department-wide threats as well as consideration of Department-wide solutions for incident detection and response. The Federation of CIRTs will establish relationships with other incident response organizations, such as the US-CERT, and share relevant threats, vulnerabilities, or incident data. The DOC Office of the CIO will approve all policies and procedures for operation of the DOC Federation of CIRTS. For inclusion in the Federation of CIRTs operating procedures, the Department requires submission of each operating unit's incident response standard operating procedures to the DOC Office of the CIO.

# Appendix C – Major IT Initiatives in the Department of Commerce

## DEPARTMENTAL CROSS-CUTTING INITIATIVES

### Department of Commerce Integrated Messaging System

Commerce has embarked on a project to expand communication from the current, simplistic electronic communication and calendaring functions to a more robust, "total" communication capability which includes enterprise content management tools and integrated voice and video capabilities. Traditionally, there has been a gap in technology between private sector initiatives and the current state of the public sector. Closing that gap is an imperative for the Department to realize its mission. Private industry is rapidly moving toward implementing an Integrated Messaging System.

To enable the DOC transition to the next level, DOC Senior Management supports the adoption of a strategic vision of the future that would include the creation of a centrally located and centrally managed infrastructure, operated as a shared services model. The initial objective is the migration of all DOC bureaus to a single electronic communication and calendaring platform.

Implementing the steps required to achieve this vision will enable DOC to achieve the important objective of having a single Department-wide messaging system that:

- Allows effective and efficient communication across all bureaus,
- Eliminates the need to maintain technologies from multiple providers,
- Aligns with the DOC Enterprise Architecture and Security Objectives,
- Provides consistent security and configuration features to protect data and system integrity, and
- Capitalizes on economies of scale when leveraging shared services.

### Homeland Security Presidential Directive 12 – Federal Standard for Secure and Reliable Forms of Identification

In response to President Bush's August 27, 2004, **Homeland Security Presidential Directive 12 (HSPD-12), *Policy for a Common Identification Standard for Federal Employees and Contractors***, the National Institute for Standards and Technology (NIST), an operating unit of the Department of Commerce, developed **Federal Information Processing Standards Publication (FIPS Pub) 201,** including a description of the minimum requirements for a Federal personal identification verification (PIV) system. HSPD-12 directs the implementation of a new standardized badging process which is designed to enhance security, reduce identity fraud, and protect the personal privacy of those issued government identification. Commerce began implementing the HSPD-12 program Department-wide on October 11, 2005.

The requirement for a common identity standard will mean major changes in the issuance of identification badges for Commerce employees, contractors, and long-term visitors. Identification badges as we know them will be replaced by PIVs, and no longer will a supervisor

be able to authorize the issuance of a badge. Only those who have, in accordance with HSPD-12, been officially appointed as a Sponsor will be able to initiate the issuance of a PIV. Within the Department of Commerce, Sponsors will be designated from the Office of Human Resources Management and from the ranks of Contracting Officer Representatives.

Commerce's implementation of HSPD-12 will be based on new identity requirements:

- Everyone issued a PIV must have received a favorable adjudication of a background investigation, including an FBI fingerprint check; for most people, this will mean a National Agency Check with Inquiries (NACI).
- All personnel must be "identity-proven;" that is, they must present two forms of identification in the PIC-issuance process.
- No one person may be the sole official who requests, authorizes, and issues a PIV.

DOC will continue its coordination with the GSA's Managed Service Office (MSO) to prepare for the implementation of the EDS solution. A shared responsibility, the Executive Steering Committee composed of the CIO, Director of Human Resources, and Director of Security, established a Departmental HSPD-12 Solution Implementation team to support the operating units' implementation of the solution. This team ensures that there is effective communication between Commerce and the MSO, between Commerce and the operating unit implementation teams, and addresses areas that are common to all operating units (e.g., training course via the Commerce Learning Center, Interagency Agreements, interfaces to the MSO solution, overarching PIV II implementation plan, C&A development, union engagement, HR and OSY processes) to reduce redundant work, leverage resources, and increase efficiency.

Commerce has instituted an on-line HSPD-12 familiarization and training capability for all current and future DOC employees, contractors, and visitors. This familiarization and training will provide insight into the rights and responsibilities of those applying for or requesting issuance of a PIV. Commerce is currently developing a comprehensive, Department-wide on-line training capability, and when this capability is complete, the HSPD-12 familiarization and training course will be moved to that site.

**IPv6 Planning and Implementation**

IPv6 has been incorporated into the DOC Enterprise Architecture (EA) and the incorporation of IPv6 capability into new or upgraded IP-based technologies is a criterion for Commerce IT Review Board (CITRB) approval of all DOC Information Technology (IT) capital investments.

IPv6 is the next generation network layer protocol of the Internet and will provide DOC with expanded available IP address space, improved end-to-end security, enhanced quality of service, and reduced system management burdens. While it is essential that any substantial change to our Internet Protocol (IP)-based information systems be well planned and undertaken with a thorough understanding of the involved impacts on systems' performance and security, it is also important that the Department's strategic IT planning process embrace IPv6 with a view towards full utilization of such an important technological development in the achievement of the Department's strategic goals.

The strategic drivers for our adoption of IPv6 are derived from the Department's highest-level strategic goals. Commerce's adoption of IPv6 will enable greater efficiencies in meeting all three of our strategic goals.

Goal 1, *Provide the information and tools to maximize U.S. competitiveness and enable economic growth for American industries, workers, and consumers*, is met primarily through the provision, by the Bureau of the Census, of current measures of the U.S. population and economy to businesses, nonprofit organizations, and the public. The increased network efficiency and improved security inherent in Ipv6 will allow Census to provide information to more people more quickly, and with greater security.

The contribution of IPv6 to Commerce's second strategic goal, *Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science*, is already being demonstrated through the efforts of two of Commerce's operating units, the National Institute for Standards and Technology (NIST) and the National Telecommunications and Information Administration (NTIA), both of which have special government-wide roles regarding IPv6. To address concerns about deployment of IPv6 in the United States, the President's *National Strategy to Secure Cyberspace* directed the Secretary of Commerce to form a task force to examine the issues related to IPv6, including the appropriate role of government, international interoperability, security in transition, and costs and benefits. Formed in October 2003, the Task Force is co-chaired by the Administrator of NTIA and the Director of NIST, and consists of staff from both operating units. NIST is actively participating in the design, development, and testing of IPv6. NIST's activities include (1) pilot deployment of a multivendor IPv6 testbed focusing on evaluating IPv6 security mechanisms and technical migration strategies for existing IP networking infrastructures; and (2) the development of publicly available reference implementations of IPv6, focusing on security features and Asynchronous Transfer Mode integration issues. In support of commercial implementation of the IPv6 protocol, NTIA oversees the activities of the Internet Corporation for Assigned Names and Numbers (ICANN), an internationally organized, non-profit corporation that has responsibility for Internet Protocol (IP) address space allocation and domain name system management, for both IPv4 and IPv6 addresses.

The achievement of Goal 3, *Observe, protect, and manage the Earth's resources to promote environment stewardship*, is the primary responsibility of the National Oceanic and Atmospheric Administration (NOAA), and for an organization like NOAA with present and future networking requirements to move large volumes of radar data and simultaneously multicast large volumes of model data, it is not a question of if, but when IPv6 will be required.

NOAA is currently investigating the utilization of IPv6 to simplify the integration of NOAA-wide resources into a large Globus-enabled Grid. Because Globus grid tools already support IPv6, this initiative may well allow NOAA to more tightly integrate its high-performance computational and data resources. High-speed networks such as the National Lambda Rail are rapidly becoming available, and the adoption of IPv6 within NOAA's high-performance computing environment will allow the seamless, high-speed transfer of extremely large data sets between laboratories NOAA-wide.

While NOAA's investigation of a Globus-enabled Grid for its high-performance computing laboratories will not serve to implement IPv6 into all NOAA IT functions, it does provide a

convenient test bed to analyze performance and security characteristics of an IPv6 implementation scheme. NOAA will closely monitor model runs and data transfers to analyze and refine IPv6 behavior to evaluate the effect of specific changes and combinations.

While the timing and speed of a commercial move to IPv6 is uncertain, it is expected that IPv6 will gradually replace IPv4 over the next several years. The tremendous capital investments already made in IPv4 technology by users worldwide will likely result in an extended transition period where both protocols coexist. An upgrade to IPv6 presents DOC with a number of major challenges that have been addressed through an overall enterprise strategy. That strategy considers costs, operational requirements, and information assurance while maintaining interoperability within the Department, across the federal government, and among our customers and stakeholders worldwide. This overall strategy is in keeping with DOC's federated Enterprise Architecture, in harmony with other federal level initiatives and in concert with industry and international standards-making bodies.

Department of Commerce action toward internal implementation of IPv6 is focused primarily on our role as a customer of developing, market-driven IPv6 technology. Given this focus, DOC has adopted a strategy for the adoption of IPv6 as follows:

- DOC operating units currently participate in IPv6 studies, demonstrations, and tests and share the results with other DOC operating units. This has provided DOC with a thorough understanding of the operational, security, interoperability, and cost considerations required to execute a smooth transition to IPv6. The results of our operating units' participation in such efforts are shared with the DOC Office of the Chief Information Officer (OCIO) to ensure that efforts are coordinated and integrated into DOC-wide implementation planning. NIST and NTIA have also shared their special expertise to the same end.
- The Office of Information Technology Security, Infrastructure, and Technology (OITSIT) manages DOC IP address allocation, registration, and control on an enterprise basis to promote interoperability and security, and maintains an effective program for accurate management and accounting of all DOC-owned IP addresses. OITSIT has acquired IPv6 address space sufficient to meet DOC's five-year requirements, and has initiated acquisition of IPv6 addresses to meet all future DOC requirements.
- All networks providing operational services to DOC customers or stakeholders will continue to utilize IPv4 Internet protocol for the foreseeable future. This is consistent with the latest DOC EA, which cites IPv4 as a "mandated standard" for IP-based solutions.

The DOC Office of IT Policy and Planning is leading, in coordination with the Office of Information Security, Infrastructure, and Technology, the development of a Department-wide IPv6 implementation plan. The IPv6 implementation plan for DOC will address the following specific performance measures:

- A migration schedule and milestones that recognize coexistence requirements, protect interoperability, and enhance security.

- Identification of measures required to ensure readiness for migration, resources required to accomplish the migration, and further definition of organizational roles and responsibilities.

Implementation of IPv6 will support all three of Commerce's strategic goals as well as the Management Integration Goal.

**Commerce Business System (CBS)**

The CBS, formally known as the Commerce Administrative Management System (CAMS), assists Commerce in complying with key financial management legislation such as the Office of Federal Financial Management (OFFM) and the Government Performance and Results Act (GPRA), and to ensure that Departmental and operating unit financial management is fundamentally sound to protect funds and assets against waste, fraud, and abuse and to provide more effective cost management. Pre-CBS financial systems neither complied with the relevant financial management legislation nor effectively managed Departmental assets.

In FY 1999 the Bureau of the Census became the first Departmental operating unit to adopt CBS as its system of records. The Office of the Secretary (OS), the Office of the Inspector General (OIG), and the Office of Computer Services (OCS) within OS followed in FY 2001, and in FY 2002 CBS saw further adoption with the Bureau of Economic Analysis (BEA), the Economic Development Administration (EDA), the Economics and Statistics Administration (ESA), and the Minority Business Development Administration. The National Oceanic and Atmospheric Administration (NOAA) and Bureau of Industry and Security (BIS) adopted CBS as their system of records in FY 2003, and in FY 2004 were followed by the National Institute of Standards and Technology (NIST), the Technology Administration (TA), and the National Telecommunications and Information Administration (NTIA). Through the use of CBS, the Department of Commerce has, over the past five fiscal years, been able to exhibit greater efficiency in the production of our financial reports and receive unqualified financial opinions.

The CBS project provides returns on investment in several areas including cost, quality, and overall financial management. CBS has improved the overall quality of financial data within Commerce and has increased the speed of preparation and use of financial data. The various data controls within CBS help ensure that only accurate and valid financial data can enter the system. CBS allows for data to be captured at the point of entry and the electronic routing of this data for review and approval.

The Congressional Financial Management Improvement Act requires all departments and agencies to use a financial management system that implements the US Standard General Ledger (SGL) accounts at the detail transaction level and to be in compliance with the financial standards set by the OFFM. The implementation of CBS has allowed Commerce to fully comply with this Act and has significantly improved financial management within the Department. Program managers are now able to execute queries/reports to get real-time financial management data about their projects to determine how they are doing and to view the specific expenditures and receivables associated with their project. CBS is able to automatically enforce funds control and Prompt Pay procedures and allowed Commerce to effectively address and correct several material weaknesses identified by auditors at various operating units.

Commerce utilized its Enterprise Architecture to identify the opportunity to utilize existing capabilities and avoid redundancy in the interface between the CBS feeder system and the Core Financial System. Further plans are to use commercial products or existing federal systems for the remaining functional CBS modules. The CBS project has a well-defined management structure and the CBS implementation strategy seeks to ensure maximum user involvement at each stage. The CBS Support Center has prepared a risk reduction and mitigation plan that exists in the form of IT Capital Investment Plan (Exhibit 300). Because of its considerable impact throughout the Department, the ongoing operation of CBS continues to be closely monitored by the CITRB.

The CBS project supports Commerce's Management Integration Goal and the President's Management Agenda for Financial Performance

**Commerce Business Environment (CBE)**

The CBE program was embraced by Commerce in 2004 as a key component of our revised acquisition management vision. As a part of our architectural design to reduce redundancies, streamline operations, and ensure consistent security, the CBE is an evolving approach to the integration of acquisition management systems. The bottom-line goals of the CBE are to assist Commerce's operating units' compliance with sound acquisition practices and to enhance customer service.

The CBE objectives for an automated acquisition environment are:

- Web-based "One-Stop-Shop": will provide a Web-based central point for all users, vendors, and contractors to communicate with DOC's acquisition stakeholders,
- One acquisition system to handle all end-to-end lifecycle activities: streamlines and standardizes business processes and all acquisition activities by utilizing a modernized, integrated system,
- Enhance opportunities for small businesses,
- Identify small business opportunities at early stages of the procurement process, thus implementing effective planning mechanisms for small businesses,
- Maintain vendor and past performance databases that identify outstanding small businesses and disseminate this information among program managers throughout the Department,
- Support an integrated policy, planning, and budgeting process,
- Generate reports on vendor socioeconomic data throughout the acquisition process, and
- Highlight high-risk vendors by providing past performance data, provide accountability through workflow management processes, and enhance the amount of information available for critical analysis and problem solving by procurement professionals.

The CBE comprises a number of functional acquisition systems, including the following:

***Commerce STandard Acquisition and Reporting System (CSTARS)***

The Department's current acquisition system of record, CSTARS, is the DOC acquisition system for handling all end-to-end lifecycle activities. Initially approved in 1999, CSTARS is an enterprise-wide, IT-enabled tool, used by the Department's acquisition professionals to provide the highest level of customer service in acquiring products and services. CSTARS is one of several automated business solutions and tools within the CBE. Powered by a COTS software package, this system provides the functionality needed by the contract office staff and management to fulfill procurement requirements in an efficient manner. CSTARS is being interfaced with the Commerce Business Systems (CBS) Core Financial System (CFS) through an Enterprise Application Integration (EAI) product—TIBCO. The interface helps support clean financial audits and alignment within the DOC Enterprise Architecture lines of business and services.

CSTARS is in operation within the Department's acquisition offices in the Office of the Secretary (OS), the National Institute of Standards and Technology (NIST), the National Oceanic and Atmospheric Administration (NOAA) and the Bureau of the Census. The CSTARS Program supports e-commerce and e-government activities promoted by the President's Management Council, as well as the Department's Chief Information Officer and Chief Financial Officer.

***Interactive Business Opportunities Page (iBOP)***

The Office of Acquisition Management and Financial Assistance (OAMFA) iBOP server provides a Web-based interactive project board to keep vendors and contractors apprised of the COMMerce Information Technology Solutions – Next Generation (COMMITS-NG) Government-Wide Acquisition Contract (GWAC) activities. The COMMITS-NG program provides federal agencies with an efficient and effective means for awarding IT service and solution requirements, and assists the federal government with acquiring essential IT requirements utilizing high quality performance-focused contractors. The iBOP enables the OAMFA to communicate business opportunities within the COMMITS-NG GWAC business partners' community.

***Balanced Scorecard System (BSC)***

The BSC is used to measure the performance of the Department's acquisition community. The BSC extracts quantitative procurement data from the Enterprise Acquisition Reporting Systems using an automated process. The BSC also contains a survey tool to collect qualitative data regarding Commerce's acquisition activities. The qualitative and quantitative data are used to measure the accomplishments of the operating units within the acquisition community. The BSC includes several component sub-systems that share the same platform and application base and provide integrated data into the BSC.

***Integrated Acquisition Environment (IAE)***

The IAE project serves the President's Management Agenda as it relates to e-government. The emergence of the Internet as a platform for communication and the exchange of goods and services is transforming the way organizations interact with their business partners. The Commerce Business Environment is linked to the IAE through its use of government-wide initiatives such as the Business Partners Network/Central Contractor Registration (CCR), FPDS-NG, and the Electronic Subcontracting Reporting System. These new technologies are allowing the Department to greatly reduce costs and streamline business processes while improving customer service. The IAE builds on the framework of a shared services model where no single organization has "ownership"; rather the services are a constellation of capabilities built on standards and accessible over the Internet.

The availability of accurate, timely, and useful procurement information is critical to successfully fulfilling the Department's strategic mission. The intent of the CBE is linked directly with management's ability to make sound decisions and effectively utilize the resources at its disposal in doing so.

The CBE project supports Commerce's Management Integration Goal and the acquisition component of the President's Management Agenda goal of Expanded Electronic Government.

**Office of Human Resources Management (OHRM) IT Systems**

***Automated Hiring Assessment Tool***

In August 2004 DOC began using the QuickHire application from Monster Government Solutions as a tool to speed up the recruitment of applicants for vacant positions across the Department. Commerce selected QuickHire, for linking to the Recruitment One-Stop (ROS), as part of its effort to exploit the opportunities available through the e-government initiatives outlined in the President's Management Agenda. This linkage requires full integration of job applicants' resumes, job announcement postings, and quality assessment questionnaires

Starting with the pilot in August 2004, the use of QuickHire was expanded throughout DOC until all HR offices were brought onboard in December 2004. The QuickHire product did experience some operational issues, due to heavy usage during Q2 of FY 2005, but these problems were resolved and usage continues to grow.

Commerce is actively pursuing the opportunities available through the current e-Government initiatives as outlined in the President's Management Agenda. These initiatives require linkage to all assessment systems in order to fully integrate the job applicant's resume, job announcement posting, and quality assessment questionnaire. Additionally, the Office of Human Resources Management (OHRM) has the continuing mandate to provide the most highly qualified and diverse candidates to all hiring managers within DOC. It is for these reasons that OHRM must ensure its use of the most cost-effective and efficient hiring practices available.

DOC plans to dramatically improve its current hiring process in several ways. Primary among these is to demonstrate an increased caliber and diversity of applicants who are made available to the hiring managers for selection. DOC also has the objective to expedite the steps from

identification of the need to fill a vacant position through the acceptance of a job offer by the best-qualified applicant.

Any proposed system must fully comply with all Federal and DOC IT policies and procedures to include all aspects of security, planning and documentation, Section 508 compliance, and complete life-cycle data management. Further, a solution must include current full integration with all aspects of ROS. Also, it must comply with and provide for all hiring options available under the Senior Executive, Merit Assignment, and Delegated Examining programs within DOC.

This project seeks a complete and robust array of services and tools to connect with, attract, assess, and hire the most highly qualified and diverse candidates to fulfill the mission of the US Department of Commerce (DOC). This will involve requirements analysis, open market competition, evaluation, and implementation.

The proposed solution must leverage and partner with our professional human resources staff to address each step within the entire functional array of the hiring process for all positions with the DOC. This includes: 1) Identifying potential hiring challenges and providing proactive solutions; 2) Drawing the most highly qualified applicants to DOC positions from a diverse population; 3) Providing a complete battery of applicant assessment tools which provide for multiple levels of review and screening; 4) Providing help desk support, documentation, and training for HR staff in proven best practices for candidate attraction, assessment, & selection, and in the appropriate use of hiring automation; and 5) Providing for all hiring options available under the Senior Executive, Merit Assignment, and Delegated Examining programs within DOC.

The OHRM Automated Hiring Assessment Tool project supports Commerce's Management Integration Goal and the President's Management Agenda goal of Strategic Use of Human Capital.

***WebTA***

In FY 2004, OHRM deployed, as a pilot project within the Office of the Secretary, WebTA, a Commercial Off-the-Shelf Time and Attendance processing system. WebTA is a Web-based time and attendance system that provides an interface with the National Finance Center and allows employees to input their own time and leave data and provides them with the ability to submit electronic leave requests and validate timecards online.

One of the drivers in the selection of a Web-based time and attendance system was the need to use a system that supported the roles and responsibilities of the main parties involved in timekeeping: the employee, timekeeper, and supervisor. WebTA has proven to successfully support each of these roles; employees can track their time by project and electronically request leave, timekeepers can accumulate payroll data by project and payroll category, and supervisors can approve leave requests and certify timecards online. The WebTA application is also compliant with the O/S Information Technology Enterprise Architecture, the goal of which is to have information accessed (both locally and remotely) through Web-enabled processes running over secure, high speed communications lines and to achieve more efficiencies and higher levels of integration and interoperability. WebTA achieves this and more as it improves service delivery to clients (i.e., desktop delivery), improves efficiency and data access for clients (via internet access from any location 24/7), assists in modernizing the human resources (HR) information system infrastructure, and supports the HR organizational culture. Further since

WebTA is a table-driven application, it has allowed the Department to quickly implement enhancements to accommodate changes in regulations, such as those required under the Federal Workforce Flexibility Act of 2004, and to track highly visible programs such as Telework.

The WebTA project supports Commerce's Management Integration Goal and the President's Management Agenda goal of Strategic Use of Human Capital.

***Commerce Learning Center***

Commerce is in the process of implementing a new Commerce Learning Center, powered by Learn.com. The Commerce Learning Center will serve as the portal site to deliver and track career development activities for all agency employees. It will utilize learning management tools and will target curriculum based on both individual and agency needs. The Commerce Learning Center will allow the agency to focus training efforts on specific needs and match employee professional and individual development to courses and services.

By providing on-demand e-learning tools and services and training data management, the agency is better able to attract, retain, manage and continuously educate the highly skilled professionals needed for a flexible and high-performing workforce.

The Commerce Learning Center project supports Commerce's Management Integration Goal and the President's Management Agenda goal of Strategic Use of Human Capital.

**Herbert C. Hoover Building Infrastructure Network (HCHBNet)**

In 1995, DOC commissioned a study of the telecommunications network environment in the Herbert C. Hoover Building (HCHB). This study found that there were approximately 100 individual networks serving the 4,000 users within the building. These heterogeneous, and in some instances, incompatible networks were the result of development and installation efforts conducted by autonomous operating units, working independently. As a result of this study, in FY 1998 DOC began developing a telecommunications improvement plan, which resulted in a design recommendation for a consolidated network infrastructure for the HCHB. This design recommendation, now known as the HCHBNet, was vetted by all the operating units within the building, refined to meet a comprehensive set of telecommunications needs, and approved by DOC executive management in FY 1999.

DOC envisioned HCHBNet as a way to provide the Department with opportunities to achieve efficiencies and savings such as consolidation of help desks, security offices, and other IT support services. The new network infrastructure was designed to significantly lower the costs of technology refreshment previously experienced in an environment of independent networks within the HCHB. The HCHBNet also provided the opportunity for greater efficiencies in adopting new technologies, including emerging products that would permit voice, data, and video to share a common, structured wiring infrastructure.

In FY 2000, DOC received approval and funding for the construction of HCHBNet, and construction commenced in May 2001. The basic backbone connectivity of HCHBNet was completed in December 2002 and migration to the new network, beginning with the Office of the Secretary, commenced immediately. Since then, all but one operating unit (International Trade Administration) at the HCHB have migrated onto HCHBNet, as have several non-government

entities (such as the Department of Commerce Federal Credit Union and the Commerce Child Development Center) located within the HCHB.

During the time of the installation of the basic backbone of the HCHBNet, DOC management recognized the immense benefits of early-on integration of data, voice, and video onto the new HCHBNet infrastructure. Even before the migration of operating units to the HCHBNet, DOC began the incorporation of a new, state-of-the-art IP-based telephone system into the HCHBNet. Other innovations incorporated into the HCHBNet include an emergency broadcast system to alert HCHB occupants to developing emergency-situations. The HCHBNet emergency broadcast system is the centerpiece of the HCHB emergency operations plan, providing notice of fire, hazardous material, and terrorist threat situations. The HCHBNet has also incorporated a public address capability and a closed circuit security camera system. The incorporation of Voice-Over-IP telephony, emergency broadcast capability, and closed circuit camera security system has already saved the American taxpayers many thousands of dollars because these functions were incorporated using the existing cable infrastructure provided by HCHBNet, eliminating the need for expensive and duplicative separate wiring systems. Also the resources to support these services falls to the core backbone engineers for maintenance and services, not requiring additional contracted labor resources.

HCHBNet has an enormous bandwidth capability and is readily scalable to fit the Department's expanding needs for increased communications capacity. The Office of the Secretary, Office of the Chief Information Officer is harnessing the power of HCHBNet to expand its use of teleconferencing, which improves communications, avoids costs for time and travel, and expedites meeting times. HCHBNet also provides employees with more opportunities for telework by providing secure access to files via Virtual Private Networks (VPN). HCHBNet also helps operating units keep data on laptops secure by providing a connection to the Office of the Secretary's SafeBoot encryption server. Vendors requiring Internet access while visiting the HCHB can obtain this service securely by directly accessing without logging into the HCHBNet. Also, wireless connectivity is available in secured locations within the HCHB.

The Office of Networking and Telecommunications Operations (ONTO) oversees the HCHBNet. Contractors provide operational support under a performance-based, firm-fixed price contract with an incentive pool for performance. The contract vehicle allows operating units within HCHB to easily initiate special projects related to connectivity, telephone service, help desk, etc., thus avoiding costs that would otherwise be spent on duplicative, time-consuming procurement efforts.

HCHBNet faces several challenges in the years ahead. One of these is the conversion from Internet Protocol Version 4 (IPv4), currently used throughout the Internet, to Internet Protocol Version 6 (IPv6). ONTO is spearheading this transition. All newly purchased equipment, as well as existing devices, is IPv6-compliant.

Another challenge is the pending renovation of the HCHB. The scope of the building renovation has not been determined, but there will be re-cabling within the HCHBNet, particularly in office spaces. With the renovation efforts, it is ONTO's goal to migrate the International Trade Administration onto HCHBNet. Renovation may also serve as an opportunity to save on ever-increasing utility costs by consolidating all HCHB server rooms into one central computer room.

Server room consolidation would also free up resources currently spent on duplicative security, environmental, and staffing efforts.

The HCHBNet project supports Commerce's Management Integration Goal.

## MAJOR MODERNIZATION EFFORTS HIGHLIGHTED

### Bureau of the Census

#### *21st Century Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) Enhancements*

The 21st Century MAF/TIGER Enhancement program will be a major improvement to the quality and accuracy of the Census Bureau's digital geographic data, which is used by census takers throughout the U.S. as well as other state, local, and tribal government entities and numerous academic institutions throughout the U.S. The MAF/TIGER Enhancement program is an example of the Department's strategic thrust to redesign its business processes through the application of leading-edge digital technologies. Planning for the 21st Century MAF/TIGER adheres to Commerce's architecture and security guidelines, including those relating to accessibility (Section 508) and the E-Government Act. The plan is supported by a comprehensive cost-benefit analysis and well-documented project management cost, schedule, and performance measurement baselines

The current Master Address File (MAF) is a list of all addresses and locations where people live or work, covering an estimated 115 million residences, as well as 60 million businesses and other structures in the U.S. The Topologically Integrated Geographic Encoding and Referencing (TIGER) portion of the project is a digital database that identifies the type, location, and name of streets, rivers, railroads, and other geographic features, and geospatially defines their relationships to each other, to the MAF addresses, and to numerous other entities. The Census Bureau's Geography Division maintains the database internally in the Department. Improvements to MAF/TIGER will allow the Census Bureau's data collection operations to adopt an integrated collection and update methodology for address lists and geographic data required for the 2010 Census, the American Community Survey (ACS), and household surveys. Additionally, while working within the privacy and confidentiality structures of Title 13, U.S.C, the MAF/TIGER Enhancement program will allow for two-way sharing of high-quality address range and geographic data with state, local, and tribal governments, and will allow the Census Bureau to provide the highest possible quality in the geographic products and services to its many statistical-data customers.

A modern processing environment allows the Census Bureau to use commercial-off-the-shelf (COTS) products and Geographic Information Systems (GIS) tools to make significant performance improvements in existing processing systems.

In FY 2003 Census began to implement geographic partnership programs including Web-based and interactive geographic updating systems. From 2003 through 2007, Census updated road centerline locations in over 2,900 counties, and in FY 2008 we expect to complete the remaining counties nationwide.

The MAF/TIGER Enhancement program supports Commerce's Strategic Goal # 1.

## National Oceanic and Atmospheric Administration

### *NOAA High Performance Computing (HPC) Planned Improvements*

NOAA currently operates and manages HPC resources associated with three separate organizations: the Geophysical Fluid Dynamics Laboratory (GFDL) located in Princeton, N.J., the Forecast Systems Laboratory (FSL) located in Boulder, CO., and the National Centers for Environmental Predictions (NCEP) located in Camp Springs, MD. GFDL produces timely and reliable knowledge and assessments on natural climate variability and anthropogenic changes in the development of various earth system models. FSL conducts applied meteorological research and development to improve observing technology and create short-term weather forecast and warning systems. NCEP develops models and delivers national and global analyses, guidance, forecasts, and warnings of weather, water, and climate phenomena to its partners and external user communities. Historically, the three organizations have independently procured, operated, and managed their HPC resources in a stove-piped manner.

Starting in the fall of 2003 several catalysts for changing the HPC program arose and were addressed by the NOAA HPC community. These included a change in the overall NOAA culture, leading all offices and programs to take a "corporate view," encouragement from the Department to approach HPC differently, growing requirements and tight budgets, recognition of lost opportunities to collectively use HPC resources to realize NOAA's objectives, and a need to accelerate the transition of programs from research to operations.

In order to implement the needed changes to the HPC program the following four strategic objectives were adopted.

1. Develop a NOAA-wide approach for managing HPC requirements.

NOAA's agency-wide planning, programming, budgeting, and execution (PPBES) is used to develop, prioritize, and fund mission requirements. Mission requirements will drive technical requirements. Technical requirements are assessed and solutions developed by the new HPC integrated management approach.

2. Migrate from an organization-based HPC architecture to a function-based architecture.

NOAA has three core functional requirements: operations (which includes backup), operational development (includes operational test bed for pre-operational software engineering), and applied research & development (R&D) (includes development test bed to test code against standards, e.g., interoperability). These three requirements drive two architectures, one for operations, operational development and backup, and the other for applied R&D.

3. Base acquisitions on functional needs rather than organizational needs.

The acquisitions will be based on the architectures: one Request For Proposal (RFP) for NOAA applied R&D and another RFP for operations. The R&D acquisition will include both the National Weather Service and Office of Oceanic and Atmospheric Research, will provide for a potential phased delivery, and will include an option to support operations. The acquisition for operations will include the full suite of operational requirements, including backup, and an operational test bed. It will also include an option to support applied R&D.

4. Implement an integrated approach for managing the HPC program.

Management of the HPC program will be integrated into the NOAA Office of the Chief Information Officer and will be supported by a NOAA-wide HPC Board. Integrated management includes planning, establishing, and overseeing implementation of HPC principles and policies, architecture, acquisitions, and performance measures. This approach is consistent with NOAA business and program models and federal government high-end computing best practices. The HPC program receives its funding from the Environmental Modeling Program (EMP). The EMP delivers trusted, timely, and accurate environmental assessments and predictions through next-generation models that are:

- *Integrated* – based on a "whole-earth" system and a broad range of applications
- *Interoperable* – linked through architecture, and across multiple, geographically distributed HPC Centers
- *Mission Driven* – support all NOAA service areas
- *Accessible* – supported and available to the entire community and providing an ability to link the nation's science advances to NOAA's mission

The HPC program supports the following NOAA mission outcomes:

- Weather and Water Outcome: Enhance weather and water prediction through interdisciplinary modeling, and an ability to expand the scope of predictions (e.g., air quality, harmful algal bloom, and on-demand hazards runs).
- Climate Outcome: Improved seasonal to interannual diagnosis and prediction; additional Intergovernmental Panel on Climate Change (IPCC) scenario runs.
- Ecosystem Outcomes: New R&D architecture will make extensibility to Coastal and Ocean ecosystem modeling feasible.

Commerce and Transportation: Extremely high-resolution weather models are key to improved aviation and marine weather. Some of the benefits that NOAA will realize as a direct result of these changes in the HPC program include:

- more effective and efficient use of HPC resources
- streamlined acquisitions
- strategic decision making
- faster transition of research to operations.

This approach seeks to address three primary categories of risk: acquisition, culture change, and technical. Issuing two RFPs will mitigate acquisition risk by reducing the probability of schedule slippage resulting from delays in the acquisition process. Culture change risk will be managed by using the PPBES process, the HPC Board, frequent and open communications, employing an iterative change approach, and assessing the benefits of developing a consolidated HPC OMB Exhibit 300 business case by FY 2008. Technical risk will be mitigated through the use of a spiral developmental methodology that calls for making iterative improvements over time.

The improvements in NOAA's HPC environment support Commerce's Strategic Goal # 3 and the Management Integration Goal.

## United States Patent and Trademark Office

### *Patent Automation Program*

The United States Patent and Trademark Office (USPTO) initiated the Patent Automation Program to enable the USPTO to migrate to a more efficient operating environment that supports the business goal of providing quality services and products in a timely manner to customers and stakeholders. Implementing the Patent Automation Program supports USPTO efforts to achieve and exceed its Agency Strategic Plan objectives.

The increased use of automation contributes directly to Commerce's Strategic Goal number 2: "Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science." The Patent Automation Program supports the expansion of electronic government by promoting the sharing of information more quickly and conveniently with the public, businesses, and other intellectual property offices. In addition, the Patent Automation Program supports the strategic goal by creating a fully electronic patent process that not only reduces costs but also helps the USPTO meet the high public demand for patent information and allows more efficient communication with the public and other USPTO customers worldwide.

In turn, the Patent Automation Program directly supports: USPTO's Strategic Goal number 1: "Optimize Patent Quality and Timeliness," Strategic Objective number 2: "Improve and integrate existing electronic systems to promote full electronic patent application processing; implement better/more secure systems," USPTO's Management Goal: "Achieve Organizational Excellence," and Management Objective number 3: "Dramatically simplify on-line access to, and availability of, USPTO information and data."

The Patent Automation Program: enables Patent business customers to create, and USPTO internal users to process, electronic patent applications and follow-on papers more easily and accurately; reduces time required for processing and responding to customers; automates routine patent formalities tasks so that patent examiners can focus on the intellectual aspects of examination; and continuously improves quality throughout the processes. By implementing the Patent Automation Program, the USPTO is able to reduce contractor costs, eliminate lost paper files, improve workflow tracking, and automate many support functions to yield a higher quality product.

The Patent Automation Program will close an identified agency performance gap to properly support the Office by implementing a forward-thinking, USPTO-controlled, fully-scalable, enterprise-wide, text-based, integrated file wrapper system in the coming years; Patent File Wrapper (PFW), developed by USPTO, will be that system. In order to meet the massive challenges faced by USPTO in this century, the Office must move forward in implementing a useful, scalable solution with an enterprise-wide scope. A new system is proposed that will adequately support the Office as it faces the issues of a significant increase in filings, an urgent need for many types of remote access, and quantum changes in the examined technologies. USPTO must develop and implement workflow, messaging, intelligent text processing, and a content management system. PFW development and implementation will significantly advance

the automation and management control over several major patent examination processes from initial application receipt though final patent grant and publication.

***Trademark Automation Program***

The United States Patent and Trademark Office (USPTO) initiated the Trademark Automation Program to enable the USPTO to migrate to a more efficient operating environment that supports the business goal of providing quality services and products in a timely manner to customers and stakeholders. Implementing the Trademark Automation Program supports USPTO efforts to achieve and exceed its Agency Strategic Plan objectives.

The increased use of automation contributes directly to Commerce's Strategic Goal Number 2: "Foster science and technological leadership by protecting intellectual property, enhancing technical standards, and advancing measurement science."

In turn, the Trademark Automation Program directly supports: USPTO's Strategic Goal number 2: "Optimize Trademark Quality and Timeliness", Strategic Objective number 2: "Improve quality of examination by ensuring consistency and quality of searching and examination, and provide internal on-line tools", Strategic Objective number 3: "Provide electronic file management and workflow", Strategic Objective number 4: "Develop interactive on-line electronic filing capabilities and upgrade e-tools", USPTO's Management Goal: "Achieve Organizational Excellence", and Strategic Objective number 3: "Dramatically simplify on-line access to, and availability of, USPTO information and data".

The Trademark Automation Program supports the expansion of electronic government by promoting the sharing of information more quickly and conveniently with the public, businesses, and other intellectual property offices. In addition, the Program enables more efficient communication with the public and USPTO customers by providing a single point of access for trademark application information. Furthermore, the Program will help improve the integration of electronic communications to offer market-based services and improve the availability of trademark information to more effectively serve an increasingly larger, global client-base.

The Trademark Automation Program enhances the current manual trademark application processes with electronic processing and improves the maintenance of all the records associated with Trademark applications. By implementing the Program, USPTO reduces operational costs, improves efficiency and quality through workload and process management, reduces pendency, increases visibility and control through improved management reporting capabilities, and supports the expansion of the Trademark Work-at-Home program. The Program also enables improved access to USPTO information by internal users and the public and facilitates the international exchange of information and protection of intellectual property.

The Trademark Automation Program will improve the processing of trademark applications and registrations and provide improved support for the staff. The Program includes an electronic workflow system to route work items through well-defined processes and provides prompt and efficient communication with internal and external customers. The workflow system will provide: a consistent user interface, extensible across functions; coordination of specialized system components via web services and middle-tier components; migration of business logic from the database servers to web services; and reduction of the complexity of the interface services between interconnecting systems. These functions provide increased system flexibility

to easily and quickly adapt to changing technology and add new capabilities such as accepting Portable Document Format (PDF) formatted forms and attachments, resulting in reduced software enhancement and maintenance costs.

## OTHER OPERATING UNIT SPECIFIC INITIATIVES

### Bureau of the Census

In response to the lessons of Census 2000, and in striving to better meet this nation's ever-expanding needs for social, demographic, and geographic information, the Department of Commerce and the Census Bureau developed a multi-year effort to completely modernize and re-engineer the 2010 Decennial Census Program. This re-engineering effort has four major goals:

1. Improve the relevance and timeliness of census long-form data;
2. Reduce operational risk;
3. Improve the accuracy of census coverage; and
4. Contain costs.

The re-engineered 2010 Decennial Census Program consists of three highly integrated components designed to take advantage of opportunities for innovations made possible through the expanded use of technology, major changes in the business process for data collection, and the use of focused coverage improvement procedures. These components complement each other and form the basis for re-engineering the 2010 Decennial Census Program; one will not work to its full potential without the others. The American Community Survey (at full implementation since 2005) is collecting and tabulating detailed characteristics data every year using a large household survey. In previous Decennial Census programs these data only were collected and tabulated once a decade. The MAF/TIGER Enhancement Program is on schedule for completion in FY 2008 of a multi-year effort to improve the Census Bureau's geographic information systems in support of the American Community Survey and 2010 Census operations. The 2010 Census is nearing completion of a multi-year program of integrated planning, development and testing to completely restructure the management and conduct of the effort to collect basic characteristics data needed for Congressional apportionment and redistricting. Central to this effort is the use of mobile computing devices (MCD) during non-response follow-up visits to households that do not mail back their questionnaire in 2010. This is by far the largest and most expensive operation of the decennial program, and the use of this technology allows program changes estimated to produce cost savings of over $1 billion. For the 2010 Census, successful major tests were completed in 2003, 2004, 2005, and 2006, and the 2008 Census Dress Rehearsal is underway. With the beginning of the Local Updates of Census Addresses (LUCA) program, early operations for the 2010 Census itself are also underway. The Census Bureau also met its first legal deadline (April 1, 2007) by delivering proposed topics for the 2010 Decennial Census Program to the Congress.

#### Field Data Collection Automation (FDCA)

FDCA is a cornerstone of Census' reengineering of the decennial census process. Through the FDCA project, Census will equip half a million temporary field workers with GPS-capable

MCDs. These MCDs will be used by temporary field workers to assist in the tasks of address canvassing, non-response follow-up and census coverage measurement (person interviews), and the temporary field workers, working out of approximately 500 temporary local census offices. FDCA will reduce the costs of staff and office space previously required to compile census-takers' reports using traditional paper-based methods.

Acquisition and deployment of MCDs and data collection software will allow Census' temporary field workers to navigate to their assignments, update address lists and maps, capture data from interviews, collect global positioning system coordinates for living quarters, and report time and expenses for payroll. During non-response follow-up and census personal interviews, the MCDs will enable field workers to receive updated daily assignments. The MCDs will also enable Census headquarters to track progress and produce management reports.

FDCA will also provide Regional Census Centers and Local Census Offices with back office IT support, including: access to Commercial Off-the-Shelf office software and other critical systems such as the Decennial Applicant, Personnel, and Payroll System (DAPPS), Virtual Private Network connectivity, help desk services, Voice over Internet Protocol (VoIP) telephone service, and IT security. IT security for FDCA will include the personnel and automated systems necessary for ensuring compliance with all security requirements associated with the storage and transmission of data across platforms in the field.

The FDCA contractor has completed the design and manufacturing of the MCD and associated software that the Census Bureau will use for the 2008 Dress Rehearsal. The MCD is a fully integrated device designed specifically for the operational environment in which the temporary field staff must carry out their data collection responsibilities. The FDCA project has established two temporary Local Census Office and a presence in two existing regional office for managing dress rehearsal operations. Address canvassing operations supported by the FDCA system commenced in early May 2007.

Decennial Response Integration System (DRIS)

The overarching goal of the DRIS is to provide the solution required for self-response data capture, respondent assistance, and data integration in connection with the 2010 Census. Specifically, DRIS includes those activities related to developing, deploying, staffing, operating, securing, maintaining, and eventually disposing of the systems, infrastructure, and facilities required for self-response data capture, telephone Coverage Follow-up, and respondent assistance for the 2010 Decennial Census process. DRIS will provide a direct service to the public. It will enable individuals to obtain assistance with 2010 Census questions; request an English or foreign language census form or a language guide; and respond to the 2008 Dress Rehearsal and the 2010 Census via paper. (NOTE: For the 2010 Census, DRIS also provides for self-response via telephone.) The DRIS solution will also include the means to standardize and organize response data collected on the MCDs used by Census field workers with the self-response data captured via DRIS. Finally, DRIS will capture 2008 production metadata related to all operational modes. This will allow the Census Bureau to independently determine the productivity and progress of each self-response mode and adjust operating plans based on test results. Because the Decennial Census is of such importance in achieving Commerce's Strategic Goal #1, the Department considers it to be a special management concern and monitors the project closely.

### *Data Access and Dissemination System (DADS)*

In 1997, the Bureau of the Census began creating the Data Access and Dissemination System (DADS), composed of the internal and external American FactFinder (AFF) systems, the Data Product Production (DPP) systems, and a "data mining" capability against detailed data files (Advanced Query System (AQS)). These systems were jointly designed to create, produce, and disseminate Census 2000 and other Census Bureau data and products. AFF is the main dissemination vehicle and houses predefined and customized tables for Census 2000 data, the American Community Survey and data from the Economic Census. The DPP system is used for internal tabulations based on data from Census 2000. AQS is a system that allows the free form querying of Census 2000 detailed data sets, with complex queries, table formats, and contents determined by the user, constrained by disclosure filters. The AQS is targeted for high-end external users and Census Bureau data specialists.

The DADS Program exists simultaneously under a development and implementation paradigm. DADS will continue to be heavily employed for the creation and dissemination of Census data products well beyond calendar year 2010, as additional Census data products are made available and to support the 2010 Decennial Census, the Decennial Dress Rehearsal, the American Community Survey, and the 2007 Economic Census. The program is in the process of re-competing the DADS contract and preparing for the development of a replacement system that will allow greater efficiency, flexibility and functionality in the dissemination of popular Census Bureau data.

The DADS application supports Commerce Mission Goal #1.

## National Oceanic and Atmospheric Administration

### *Advanced Weather Interactive Processing System (AWIPS)*

AWIPS is a technologically advanced information processing, display, and telecommunications system that is the cornerstone of the National Weather Service (NWS) modernization effort. AWIPS is a Linux-based interactive computer system that integrates all NWS meteorological and hydrological data with satellite and radar data and enables forecasters to prepare and issue more accurate and timely forecasts and warnings.

The AWIPS technical environment consists of an integrated suite of automated data processing equipment deployed to field offices and National Centers to support complex analysis, interactive processing, display of hydro-meteorological data, and the rapid dissemination of warnings and forecasts in a highly reliable manner. A Wide-Area-Network connects sites for multi point-to-point and point-to-point communications. The NOAAPORT broadcast system provides the communications capability, via a satellite broadcast network (SBN), to afford internal and external users open access to much of NOAA’s centrally collected real-time environmental data.

A modernization initiative is under way to replace outdated Hewlett Packard UX D-class servers with PC-based Linux servers providing network router enhancements and Local Area Network improvements. NOAA is in the process of deploying in phases hardware and software upgrades to Weather Forecast Offices, River Forecast Centers, National Centers, and NWS test facilities.

A new data delivery paradigm is under development, and will provide access to data not resident locally at the Weather Forecast Office or River Forecast Centers.

The AWIPS application supports Commerce's Strategic Goal #3.

***Next Generation Weather Radar Product Improvement (NEXRAD PI)***

The National Weather Service provides the nation with meteorological and hydrological services that are as complete, accurate, and timely as possible within existing scientific, technological, operational**,** and economic constraints. These services include data collection, data analysis, forecasting, and information dissemination. One of the most important elements of this overall mission is the NWS responsibility for public warnings and forecasts. The goal of this service is to provide the public with timely and accurate meteorological, hydrological, and oceanographic information for public safety and planning purposes and to ensure economic vitality.

The NEXRAD system is one of NWS' prime observation systems for acquiring data and providing weather warning and forecast information about tornadoes, severe thunderstorms, and flash floods. The NEXRAD Product Improvement (PI) program is part of a tri-agency initiative to plan and implement continued improvement of the NEXRAD system. It involves NWS, the Department of Defense's Air Force Weather Agency and the Department of Transportation's Federal Aviation Administration (FAA). The program goals are to: (1) improve NWS tornado, large hail and flash flood warnings; (2) provide for cost effective long-term maintenance of WSR-88D weather radar units, (3) provide cost effective recurring technological improvements in order to postpone replacing the WSR-88Ds, and (4) increase the update rate of radar data acquisition and acquire higher resolution data. In FY 2007, NEXRAD PI completed the Open System Architecture project that replaced the obsolete, 12-year-old computer and signal processing equipment in the WSR-88Ds with Commercial Off The Shelf hardware and standards-based open system compliant software. The NEXRAD PI Dual Polarization project will use new algorithms that: mitigate the range/velocity ambiguity problems; remove non-weather clutter from data; and can distinguish among rain, snow, and hail.

Full deployment of the NEXRAD PI will provide significant improvements to the NWS' capability for producing tornado and severe weather warnings with greater accuracy, fewer false alarms, and with 50% greater lead times.

The NEXRAD PI application supports Commerce Mission Goal # 3.

***National Weather Service Telecommunications Gateway Replacement (NWSTG)***

The National Weather Service Telecommunications Gateway (NWSTG) is the primary data communications switching system of the NWS. It is a global distributor of weather messages in support of the NWS commitment to the World Meteorological Organization's (WMO) worldwide data exchange structure and is a Regional Telecommunications Hub (RTH) of the WMO Global Telecommunication System communication network.

NWSTG provides national and global near real-time data exchange services and is operated twenty four hours a day to acquire data; process observations; construct and disseminate messages and files of observations, model analysis, and forecast products. Dependability and maintainability of the Gateway are crucial to maintaining a timely and reliable transmission of

products of the highest importance to stakeholders worldwide. The NWSTG allows the NWS and its partners – public, private, and commercial – to perform their core functions. The NWSTG supports the NWS mission by collecting and distributing raw and processed hydro-meteorological data and products. In FY 2007 NOAA has nearly completed an effort to replace the NWSTG, incorporating both a technology refreshment component and the development of redundant operational capabilities.

The National Weather Service Telecommunications Gateway supports Commerce Mission Goal # 3.

***Geostationary Operational Environmental Satellites (GOES) and Polar-orbiting Operational Environmental Satellites (POES)***

NOAA GOES provides hemispheric and local coverage for measuring meteorological data used in predicting, monitoring, and observing weather trends. GOES satellites provide real-time weather data used to develop short-term weather forecasts. Data from the GOES satellites, combined with data from Doppler Radars and Automated Surface Observing Systems, greatly aid weather forecasters in providing better warnings for hurricanes, tornadoes, thunderstorms, winter storms, flash floods, and other severe weather. These warnings help to save lives, preserve property, and benefit commercial interests.

Launches are scheduled to replace aging satellites in order to maintain two operational GOES satellites in orbit at all times – one each at an eastern and western continental U.S. longitude. Depending on launch facility availability and economic factors, additional satellites may be launched into orbit at certain times and placed in standby or storage mode, ready to replace an impaired or failed operational satellite. The first GOES N series satellite was launched in 2003 and planning in support of further GOES satellite series continues.

NOAA also maintains the Polar-orbiting Operational Environmental Satellites (POES). These satellites provide about 90% of the data used in the National Weather Service's numerical weather forecasting model and are becoming an important source of climate data.

Both the GOES and POES systems depend on ground-based information technology systems to command and control the operations of the satellites and acquire their remotely sensed data. The ground systems also support the launch, activation, and evaluation of new satellites and continual in-depth monitoring of satellite functions.

The GOES and POES applications support Commerce's Strategic Goal #3.

***National Polar-orbiting Operational Environmental Satellite System (NPOESS)***

In 1994, it was recognized that converging the existing polar systems from the Department of Commerce (DOC) and Department of Defense (DoD) would result in a more cost effective and higher performance integrated system. As a result, in May 1994, a convergence plan was submitted to the U.S. Congress stating that NPOESS could reduce the cost of acquiring and operating polar-orbiting environmental satellite systems, while continuing to satisfy U.S. operational requirements for data from these systems. Convergence of these programs is the most significant change in U.S. operational remote sensing since the launch of the first weather satellite in April 1960, and marks a significant departure from the eight previous attempts over the last 20 years to combine these separate programs. For the first time, the U.S. government is

taking an integrated approach to identify and meet the operational satellite needs of both the civil and national security communities. NOAA and DoD each provide 50% of the funding for NPOESS while NASA contributes risk reduction activities.

NPOESS is used to monitor global environmental conditions, and collect and disseminate data related to weather, atmosphere, oceans, land and near-space environment. The President endorsed this initiative, signing Presidential Decision Directive NSTC-2. The NPOESS program is managed by the tri-agency Integrated Program Office (IPO), employing personnel from the DOC, DoD and NASA.

In June 2006, the Office of the Secretary of the Defense certified that:

- The program is essential to National Security;
- No alternatives exist at equal or lower cost, with equal capability;
- The cost estimate is reasonable;
- The management structure is adequate for program success.

The NPOESS application supports Commerce Mission Goal # 3.

***Comprehensive Large Array Data Stewardship System (CLASS)***

NOAA is responsible for archival storage and management of environmental data and information. NOAA has hundreds of millions of environmental observations stored on a variety of media dating back as far as the mid-1800s. These data support the nation's ability to ensure human safety and welfare, sustain economic stability and growth, and maintain environmental integrity. Much of these data and information are recorded on paper, film, and digital media.

Access to the environmental records is limited, and as the storage media deteriorates with age, the records are in danger of being lost. These data are of great value to researchers in government, academia, and private industry, as well as to the general public.

CLASS is a data archiving and access system that will improve the quality and stewardship of NOAA's data with the ability to manage volumes increasing to 18 petabytes by 2011. CLASS provides a means to preserve valuable meteorological, climatological, geophysical, and oceanographic records and to make this data accessible to, and usable by, a wide variety of researchers in both the public and private sectors.

CLASS conducts many environmental data rescue activities to preserve historical data before they are lost or become unrecoverable, thereby preserving these data to assist in finding solutions to today's problems. Many archived data sets that were in danger of being lost due to aging storage media have been rescued through migration to modern digital media.

The CLASS application supports Commerce's Strategic Goal #3.

***NOAA Grants Online***

Grants and cooperative agreements play an important role in accomplishing NOAA's mission. Until recently there were 14 separate grants processing systems – ranging from manual to various levels of automation – supporting different portions of the NOAA grant process. Each of these systems could be characterized as paper-based and heavily dependent on frequent re-keying of information.

Through a combined effort of reengineering and the use of information technology, NOAA developed and deployed NOAA Grants Online in FY 2003. This effort focused on business processes associated with soliciting and receiving grant applications through the government-wide grants.gov initiative. Through its Grants Online project, NOAA has reduced the number of labor hours required to receive and process grants from over 17 hours per grant to approximately 2 ¼, and the total time required to process and award a grant has been reduced by over a month.

The full deployment of Grants Online has enabled NOAA to redirect over 2,000 labor days annually to the technical review of grant applications. NOAA was the first federal agency to receive applications through the grants.gov e-government application front end, and NOAA Grants Online was recently selected as an Excellence.gov Finalist.

NOAA Grants Online supports Commerce's Management Integration Goal and Strategic Goal # 3.

**National Institute of Standards and Technology (NIST)**

***Time Scale and Time Dissemination***

The Time Scale and Time Dissemination System provides the Nation's official standards for time and frequency to meet critical industrial needs, including time stamping of electronic financial transactions, telecommunications, electric power transmission, transportation, navigation and positioning (including support of the Global Positioning System), and various defense applications. Time dissemination methods are developed using Internet and radio broadcasting for industrial, consumer, government, and scientific applications, which serve millions of customers daily.

This application supports Commerce's Strategic Goal #2

**International Trade Administration (ITA)**

***International Trade Process Streamlining (ITPS)***

ITPS is a comprehensive multi-agency initiative whose goal is to increase the number of small U.S. business exporters and the dollar value of export transactions. ITPS seeks to accomplish this goal by improving access to government export programs and reducing the barriers that small and medium-sized enterprises (SMEs) encounter when seeking help to export their products or services. Commerce, as chair of the Trade Promotion Coordinating Committee (TPCC), coordinates this effort with input from key partners including the U.S. Department of Agriculture, the Export-Import Bank of the United States, and the Small Business Administration. Other TPCC agencies, including Trade Development Agency, the State Department, and the Overseas Private Investment Corporation, are also important players.

Regarding the potential impact for ITPS, U.S. companies with fewer than 20 employees accounted for nearly $32 billion in export sales over the last decade and need our assistance. Despite this encouraging statistic, only 2 percent of small and medium-sized enterprises (SMEs) export, and of those that do, 63 percent export to only one foreign market. These non- or under-exporting SMEs represent an immense, untapped source of future U.S. employment and prosperity.

Numerous surveys have revealed that a critical barrier for small exporters is a lack of information about the export process and limited resources for obtaining the information and

documents necessary to conduct business abroad. Although the federal government provides a wealth of market research, programs, and counseling to assist SMEs in all aspects of the export process, this assistance is spread across 19 separate agencies and dozens of Web sites.

The ITPS initiative was created to make it easier for SMEs to obtain the information and documents needed to conduct business abroad. Export.gov, the government's online portal for small business export assistance information has been enhanced to fill this gap.

Specifically, the initiative has:

- Consolidated and integrated the export process online under Export.gov, which includes foreign partner matching/verification, export financing and insurance, and consolidated market research
- Developed online applications for export financing, insurance, and loan guarantees offered through the Export-Import Bank and the Foreign Agriculture Service's Credit Guarantee System
- Introduced "One-Stop, One Form," which has reduced the time required for SMEs to fill out export-related forms and paperwork by providing a single online form for many export transactions

ITPS has created a seamless environment for SMEs to research markets, gather trade leads, and conduct a majority of their export transactions online. Moreover, it now provides more timely and accurate export information and results in cost savings for U.S. businesses by reducing the amount of time they spend trying to get information and filling out applications and forms.

As a result of building and marketing Export.gov, over 30,000 new companies are now registered with Export.gov. Our domestic network of trade specialists are contacting these companies from across the country and helping them enter the export business. Export.gov continues to receive a customer satisfaction rating of over 80 percent and has seen the number of visitors increase by over 600 percent.

ITPS supports Commerce's strategic goal # 1 and the President's Management Agenda e-government goal.

## National Telecommunications and Information Administration (NTIA)

### *Spectrum Management*

In support of the President's Spectrum Reform Initiative, NTIA is currently using Enterprise Architecture to leverage their Paperless Spectrum Management, redesigning the systems that support this critical business function. In developing their Target Enterprise Architecture, NTIA has identified areas where interoperability of systems, particularly with the Federal Communications Commission, is critical to the success of the effort. NTIA has also implemented a Web Services Oriented Architecture to facilitate cross-agency integration.

NTIA's Spectrum Management project provides the information technology support required for NTIA to manage the federal government's use of the Radio Frequency spectrum. NTIA processes between 6,000 and 10,000 frequency assignment actions monthly. To preclude harmful interference between stations, these actions (applications from federal agencies for new frequency assignments or revisions of existing assignments) must be coordinated with other

federal agencies, and in many cases with the Federal Communications Commission and the Government of Canada. NTIA processes frequency assignment actions using its Frequency Management and Records System (FMRS) software and networked systems.

The spectrum management system supports increased technology development and commercialization by improving use of the radio spectrum through increased sharing and spectrum efficiency. It provides a more rapid method for federal agencies to obtain the spectrum necessary to operate their radio communications. It also provides a method for radio-communication system manufacturers to ensure that their systems meet federal standards and provides federal agencies with a means to obtain technical information on radio communications for planning future spectrum use.

NTIA's Spectrum Management applications support Commerce's Strategic Goal #2.

**Bureau of Economic Analysis (BEA)**

***Economic Accounts***

BEA promotes a better understanding of the U.S. economy by providing the most timely, relevant, and accurate economic data in an objective and cost-effective manner. BEA's economic programs require the Information Technology support provided by the Office of the Chief Information Officer. BEA's architecture delineates four key targets that define the areas of critical support: (1) continuing support of staff with more efficient software tools; (2) ongoing upgrades of the IT infrastructure to ensure reliability and security; (3) redesigning of core estimation systems; and (4) harnessing of rapidly developing Web-based technologies to improve data reporting and dissemination. Significant enhancements in each of these areas have been made. BEA recognizes the ongoing need to couple new opportunities presented by technological advancements with the requirement to measure and disseminate data about a rapidly changing economy.

The economic accounts prepared by BEA support Commerce's Strategic Goal # 1.

**Bureau of Industry and Security (BIS)**

***Export Control Automated Support System (ECASS)***

BIS promotes U.S. national and economic security and foreign policy interests by managing and enforcing the Department's security related trade and competitiveness programs. Business processes related to BIS's core functions of export administration and export enforcement have been supported by a legacy computer system, ECASS, since it was originally deployed in 1984.

The ECASS program is being modernized to incorporate newer technology and to provide a more robust operational capability. Modernization of the ECASS Program consists of two projects: ECASS (2000+) Redesign and ECASS Modernization. The program strategy addresses two different needs.

The first priority of the program is retaining the current IT capability to support the BIS mission. The ECASS (2000+) Redesign project is replacing the fragile ECASS Legacy system supporting 400 BIS staff and 13,000 exporters with a maintainable, reliable, current technology system. ECASS Redesign addresses the need to mitigate risk of losing current capabilities, actively capture 20 years of legacy system knowledge, and migrate the "as-is" critical business process

support to a systems foundation that is supportable and expandable. The ECASS Redesign project consists of redesigning the ECASS Legacy system using a current technology platform, and migrating existing ECASS functionality and data from ECASS Legacy to the new ECASS Core System.

When complete, the ECASS Redesign project will ensure that BIS is able to continue to support its mission critical functions, specifically processing 15,000 or more export license applications per year, including export enforcement and anti-boycott information reports and assessments, and providing export data to external federal agencies. In addition, the project will enable BIS to improve security and data integrity, and productivity, by virtue of a soundly designed system which uses current standards based software and hardware technology platforms and application architecture.

In contrast to the ECASS Redesign project, the ECASS Modernization project addresses the need to apply enabling technology that has emerged over the past decade. ECASS Modernization has the potential to "leap frog" the Bureau to close a long-standing IT service gap, and will provide added functionality, such as tools to improve participation in the Global War on Terror and counter-proliferation efforts. ECASS modernization is essential if BIS is to meet the projected increase in licensing work volume and complexity. Under current trends, each licensing officer is expected to be processing over 500 cases by 2011 -- an increase of over 25 percent above FY 2003 levels. In addition, the increasing complexity of licenses, and the need for ever more sophisticated analytical tools to determine trends, requires advanced IT capabilities that have emerged in the last decade, but have not been applied in BIS. As the volume and complexity of license applications continues to increase, BIS must make each licensing officer more productive by using efficient business processes and technology.

ECASS Modernization includes business process and workflow reengineering, and new commercial software/hardware to support it. The ECASS Modernization project comprises three parts: (1) new computer system modules to support reengineered core Export Administration processes; (2) a commercial content and digital asset management system to manage export application related electronic and paper documents; and (3) an analytical data warehouse system to support export analysis. ECASS Modernization will build on the ECASS Redesign core framework, database and application software.

The ECASS Program is being implemented in 3 stages. ECASS Redesign will be implemented in the initial stages, Stages 1 and 2 (FY2005-2009); ECASS Modernization will be implemented in the final stage, Stage 3 (FY 2007-2011). ECASS and ECASS Redesign support Commerce's strategic goal #1.